WORK-FAMILY CONFLICT AND FACILITATION AMONG EMPLOYEES IN HONG KONG

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ABSTRACT

Work-family imbalance can induce negative consequences, such as poor physical and psychological well-being for individuals. Hong Kong employees commonly agree that work-family balance is important for them, but it is difficult to balance work and family lives (Mahtani, 2006). Very few studies have comprehensively explored how to eliminate the conflict, and to enhance the integration between work and family domains. This may hinder researchers and practitioners from exploring effective strategies for promoting work-family balance. The present study explored work-family conflict and enrichment among Hong Kong employees.

This study examined the relationships between demands and resources in work and family lives, work-family conflict and enrichment, personal and work outcomes, and optimism and Confucian work values as moderator variables. The longitudinal mediating effects of work-family conflict and enrichment were examined, and potential cross-sectional and longitudinal moderating effects on the relationships between predictor variables and work-family conflict and enrichment were also explored.

A two-wave panel design was adopted with data collection separated by a ten-month interval. Questionnaires were designed for the participants and their supervisors. 509 participants at Time 1 and 208 participants at Time 2 from three universities in Hong Kong completed self-report questionnaires, and 208 supervisors of the participants completed another questionnaire at Time 2.

Predictor variables at work were significantly associated with work-family conflict and enrichment perceived in the work domain, and predictor variables in the family domain were significantly related to work-family conflict and

enrichment perceived in the family domain. Work-family conflict and enrichment were significantly associated with personal and work outcomes.

Mediation analyses showed that there were very few longitudinal mediating effects of work-family conflict and enrichment between predictor and criterion variables. These findings suggest that work-family conflict and enrichment might not consistently contribute mediating effects in the relationships between these predictor and criterion variables over time.

Potential effects of optimism and Confucian work values have been rarely explored in previous Chinese work-family studies, and therefore this study examined the moderating effects of these two variables in relation to work-family conflict and enrichment. However, moderating analyses indicated that there were very few cross-sectional and longitudinal moderating effects of optimism and Confucian work values confirmed in this study.

Overall, the findings of this research illustrate that work-family conflict and enrichment could be separately affected by demands and resources in work and family lives. Work-family conflict and enrichment could also contribute significant effects on individuals' well-being and work productivity. The results also imply that the significance of mediation and moderation effects for work-family conflict and enrichment might be determined by personal factors (e.g. coping strategies of individuals) or organisational factors (e.g. organisational culture).

The present study separately examined two directions of work-family conflict and enrichment, which extends the understanding of these topics in the Chinese context. The findings support related Western literature that perceived work-family conflict and enrichment in one domain were determined by the source in the same domain, and each direction of conflict or enrichment was

associated with outcomes in the domain receiving the conflict or enrichment. These findings may extend the discussion of the relationships between potential factors and consequences of work-family conflict and enrichment for Hong Kong employees. The present study also provided additional information to understand the relationships between cultural values and work-family conflict and enrichment. The results may aid practitioners to formulate appropriate interventions, such as family-friendly employment policies and practices in enhancing work-family balance in Hong Kong.

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CHAPTER 1

INTRODUCTION

1.1 Background to the Research

This study focuses on work-family conflict and enrichment in Hong Kong. Eby, Casper, Lockwood, Bordeaux, and Brinley (2005) claimed that balancing work and family roles is one of the main challenges for employees in the twenty first century. In traditional families, husbands were often required to work outside the home, and conversely wives were expected to stay at home to look after their children (Powell & Greenhaus, 2006). However, this phenomenon is becoming less common because many male and female employees are required to share both work and family responsibilities in their daily lives (Greenhaus, Callanan & Godshalk, 2000). This change may accordingly have a significant impact on employees' quality of life (Zedeck & Mosier, 1990).

Previous studies indicated that work-family imbalance is a significant occupational stressor that can induce various negative consequences such as poor physical and psychological well-being and lower job satisfaction for employees (Allen, Herst, Bruck & Sutton, 2000; Choi, 2008). In Hong Kong, employees are often required to be available for work (e.g. access internet or telephone for their job duties) 24 hours per day, and seven days per week (Wong, 2005). This work pattern, therefore, will require employees to spend excessive time and effort on their job, and it may induce job dissatisfaction, turnover intentions and insufficient time and energy for family-related activities (Frone, 2003; Mesmer-Magnus & Viswesvaran, 2005). Furthermore, globalization may require employees to frequently have work trips to different countries, which in turn may result in strained family relationships and withdrawal at work (Shaffer & Harrison,

1998). Under these conditions, work-family balance is particularly important for employees because it can help them to enhance their work performance (Hogarth, Hasluck, Pierre, Winterbotham & Vivian, 2000).

Based on the above information, boundaries between work and family domains have become blurred, and consequently many employees have suffered from work-family imbalance (Brough, O'Driscoll & Kalliath, 2005). In order to maintain high levels of work-family balance, Frone (2003) claimed that individuals should maintain "low levels of interrole conflict (i.e., work to family and family to work), and high levels of interrole facilitation (work to family and family to work)" (p.145). In other words, two related concepts must be focused on: work-family conflict and work-family enrichment.

Work-family conflict refers to "a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role" (Greenhaus & Beutell, 1985, p.77). Previous findings in Western societies suggest that there are two directions of work-family conflict (that is, work-to-family interference and family-to-work interference), and both of them are significantly associated with various personal consequences such as depression (Vinokur, Pierce & Buck, 1999), burnout (Haar, 2006), and organisational consequences such as absenteeism, commitment, and turnover intention (Boyar, Maertz, Pearson & Keough, 2003; Hammer & Grandley, 2003).

Work-family enrichment can be defined as "the extent to which participation at work (or home) is made easier by virtue of the experiences, skills, and opportunities gained or developed at home (or work)" (Frone, 2003, p.145). Similar to work-family conflict, work-family enrichment is also bi-directional.

Work support or resources can help to ease family problems and demands, whereas family support or resources can be a source of strength to work life (Frone, 2003; O'Driscoll, Brough & Kalliath, 2006). These two directions are respectively named work-to-family facilitation (WFF) and family-to-work facilitation (FWF). Researchers have shown that work-family enrichment is related to various positive outcomes. For instance, Grzywacz (2000) observed that both directions of work-family enrichment are associated with better mental well-being. Similarly, Brarl and Bhargava (2010) also depicted that work-to-family facilitation is positively associated with job satisfaction and organisational commitment reported by Indian employees.

1.2 Work-Family Conflict and Enrichment in Hong Kong

In recent years, work-family imbalance is also becoming common for Hong Kong employees. A local report (UBS, 2006) showed that the total number of working hours per year among Hong Kong employees is the second highest when compared with 71 cities around the world. Another work-family balance survey conducted in Hong Kong by Mahtani (2006) indicated that over 70% of surveyed employees spent less than two hours per day on family or personal activities, such as participating in family gatherings and engaging in leisure activities. These results imply that many Hong Kong employees are unable to balance work and family lives, although work-family balance is recognized as an important issue in Hong Kong (Mahtani, 2006).

Wong (2001) identified that work-family conflict was a significant occupational stressor for Hong Kong nursing staff, and was correlated with negative consequences, including lower job satisfaction and higher work accident rates. Similar results have also been revealed by Siu, Spector, Cooper and Lu's (2005) finding that work-family interference was associated with poor physical

and psychological health among Hong Kong employees. From the above results, work-family conflict is suggested to be associated with varying negative consequences for Hong Kong employees.

For tackling the problem of work-family conflict, family-friendly employment policies and practices, such as flexible working schedules, are suggested to be implemented in local organisations (Siu & Phillips, 2007). However, Chan (2007) argued that work-family enrichment is still ignored, and it should be promoted in order to comprehensively balance work and family lives among Hong Kong employees. Furthermore, Tang (2010) also argued that either the work or family domain can provide resources for employees to effectively complete assigned tasks in the opposite domain, which in turn directly contribute a significant impact on easing family demands and reducing absenteeism or turnover for those people.

1.3 Research Questions in the Present Study

Work-family balance has been recognized as an important workplace issue in both Chinese and Western societies, and work-family conflict and enrichment should be investigated. In Hong Kong, many employees also agree that work-family balance is important for them, but it is difficult to balance work and family lives (Mahtani, 2006). These employees, furthermore, also suffer from various negative consequences, including lower job satisfaction and poor physical health due to work-family conflict (Siu et al., 2005; Wong, 2001).

As mentioned earlier, it is believed that work-family conflict and enrichment are associated with negative and positive consequences for employees (Bellavia & Frone, 2005; Grzywacz, 2002). Therefore, the present study attempted to investigate various negative and positive outcomes as criterion variables of work-family conflict and enrichment.

Antecedents of work-family conflict and enrichment have often been covered in previous studies (Allen, 2001; Major, Klein & Ehrhart, 2002). Concerning work-family conflict, O'Driscoll, Brough and Kalliath (2006) indicated that job and family demands are potential antecedents of work-family conflict. These demands may include work overload (Boyar, Maertz, Pearson & Keough, 2003), work role problems (Boyar, Maertz, Mosley & Carr, 2008), the presence of dependents in the family (Tausig & Fenwick, 2001), and family role problems (Boyar et al., 2008).

Previous findings also have identified several work and family conditions that are significantly associated with enrichment. These conditions include work support (Allen, 2001), perceived control at work (Grzywacz & Bulter, 2005), family support (Grzywacz & Marks, 2000), and family control (Edwards & Rothbard, 1999). In the present study, predictor variables of work-family conflict and enrichment for Hong Kong employees were explored.

In addition to predictor and criterion variables, the mediating effects of work-family conflict and enrichment have also been explored in previous studies. For example, Ngah, Ahmad and Baba (2009) showed that work-family conflict partially mediates the relationship between locus of control and job satisfaction. This implies that high locus of control can decrease levels of work-family conflict, which in turn leads to higher job satisfaction. Similarly, Mustapha, Ahmad, Uli and Idris (2011) reported that work-family enrichment partially mediates the relationship between job autonomy and intention to stay, suggesting that job autonomy can increase levels of work-family enrichment, which in turn increases levels of intention to stay. The present research, therefore, attempted to study the mediating effects of work-family conflict and enrichment, and reviews of these mediating effects are also discussed in Chapter 3.

O'Driscoll, Brough and Kalliath (2006) stated that moderating effects can also be found in the process of work-family conflict. Previous findings have identified that spouse support (Noor, 2002), and cultural beliefs (Polemans, Spector, Cooper & Allen, 2003) may buffer the effects of antecedents on work-family conflict, and the effects of conflict. In terms of work-family enrichment, similar results also have shown that different variables such as personal characteristics (Baral & Bhargava, 2011), and work support (Karatepe, 2010) can intensify the effects of antecedents on work-family enrichment. Based on relevant Chinese literature (e.g. Chang, 1998; Siu, Lu & Cheng; 2003), the moderating effects of selected variables, including optimism and Confucian work values (that is, work values formed by Confucianism), were investigated in the present study The literature on these moderating effects is covered in Chapter 3.

1.4 Purpose of the Present Study

The present study developed and tested a model of work-family conflict and enrichment among Hong Kong employees. This model not only included relevant predictor variables (e.g. work demands), but also criterion variables (e.g. physical symptoms) of work-family conflict and enrichment. In addition, mediating effects of work-family conflict and enrichment, and moderating effects of optimism and Confucian work values on relationships between predictor variables and work-family conflict and enrichment were explored.

Previous studies have suggested that employees in Hong Kong report higher work stress and related health strains than Chinese employees from other cities, such as Beijing and Taipei (Siu, Lu, & Spector, 2007; Siu, et al., 2005). As mentioned before, work-family conflict is also a significant occupational stressor for Hong Kong employees (Siu et al., 2005; Wong, 2001). Since the economic downturn in the late 1990's, most enterprises in Hong Kong have undertaken

several reforms (e.g. retrenchment, personnel re-allocation). Therefore, Hong Kong employees are often asked to extend their working hours, which accordingly may interfere with their family and personal lives (Wong, 2004). However, there have been very few empirical studies focusing on both work-family conflict and enrichment in Hong Kong. Based on the above information, the present research attempted to systematically explore the model of work-family conflict and enrichment for Hong Kong employees.

1.5 Research Issues of the Present Study

This research attempted to address the following questions:

1. What are the predictors of work-family conflict and enrichment among employees in Hong Kong?
2. What are the outcomes of work-family conflict and enrichment perceived by employees in Hong Kong?
3. Does work-family conflict mediate the relationship between its predictor and criterion variables?
4. Does work-family enrichment mediate the relationship between its predictor and criterion variables?
5. Does optimism moderate the effects of predictor variables on work-family conflict and enrichment?
6. Do Confucian work values moderate the effects of predictor variables on work-family conflict and enrichment?

1.6 Relevance of the Present Study

The present study contributes to knowledge in the following ways. First, it extends the understanding of work-family conflict and enrichment for Hong Kong employees. Research on work-family conflict and enrichment is mainly conducted by Western researchers. However, there have been few studies focusing on those

concepts in Chinese societies. Findings from Western studies may not be fully applicable to the Chinese context because of cultural and demographic differences. McCrae, Costa and Yik (1996) argued that Chinese people are collectivists who may have different cultural beliefs (e.g. Confucian work values) than Western individualists. Spector and his colleagues (2007) also reported that cultural values (that is, individualism vs. collectivism) can moderate the relationship between work demands and strain-based work interference with family, and the relationship of strain-based work interference with family and both job satisfaction and turnover intention. By using a Hong Kong sample, the present study may provide further understanding of those concepts in the Chinese context.

To the best of my knowledge, this study is the first to systematically explore the moderating effects of Confucian work values in relation to work family conflict and enrichment. In the Chinese context, these work values are formed by the Confucian tradition, which consists of several elements, including *guanxi* (social relationships), hard work (thrift and steadiness), and endurance (patience and persistence) (Hui, 1992). Most Hong Kong employees are Chinese, and they also have been socialized by those traditional values through different authorities, including parents, significant family relatives, and teachers (Sun, 2008). Roe and Exter (1999) suggested that work values can be viewed as a coping resource for problems at work. Lu, Kao, Siu and Lu (2011) reported that Chinese employees with high Confucian work values may have greater psychological resources to tackle workplace stress, which in turn will perceive less detrimental impact from stress. Some studies also found that Confucian work values buffer the negative effects of stress on work performance (Siu, 2003), and job satisfaction (Siu et al., 2005). Supported by the above findings, Confucian work values may provide moderating effects on work-family conflict and enrichment.

Furthermore, the present study adopted a longitudinal research design. Most organisational studies in Hong Kong are cross-sectional, and accordingly longitudinal relationships between variables may not be inferred (Wong, 2005). The major advantage of a longitudinal research design is that it can look at the direction of causality and extent of change in individuals (Shaughnessy, Zechmeister & Zechmeister, 2006). Accordingly, it is able to validate hypothesized causal relationships between variables. Based on this research design, data collection in the present study was conducted at two time points, with a time interval of ten months. The time lag of ten months enabled me to explore potential effects on work-family conflict and enrichment over time (Lu, 2011).

1.7 Structure of the Thesis

This thesis consists of nine chapters (including this introductory chapter). A brief outline of all chapters is as follows:

Chapter 1 (Introduction) presents a broad overview of the background to this research. In addition, the research questions, the purpose, and relevance of the present study are introduced in this chapter.

Chapter 2 (Theoretical Model and Literature Review) presents the theoretical framework developed for this research. This chapter, furthermore, provides a review of previous literature on work-family conflict and enrichment, and their predictor and criterion variables. Related hypotheses are also described.

Chapter 3 (Mediation and Moderation) provides a review of previous literature on the mediating effects of work-family conflict and enrichment, and the moderating effects of optimism and Confucian work values. Related hypotheses are presented in this chapter.

Chapter 4 (Method) provides an overview of the research design, and describes the participants, instruments, data collection and analysis, and ethical issues in the present study.

Chapter 5 (Psychometric Analysis) presents results of confirmatory factor analysis and reliability analyses of the research instruments used in the present study. It also describes how missing values and outliers were handled.

Chapter 6 (Time 1 Results) presents the results of cross-sectional analysis from the Time 1 survey. Relationships between predictor variables, work-family conflict and enrichment, and criterion variables are described. The cross-sectional (Time 1) moderating effects of optimism and Confucian work values are also described in this chapter.

Chapter 7 (Time 2 Results) presents results of cross-sectional analysis from the Time 2 survey. Similar to Chapter 6, relationships between predictor variables, work-family conflict and enrichment, and criterion variables are described. The cross-sectional (Time 2) moderating effects of optimism and Confucian work values are also described in this chapter.

Chapter 8 (Longitudinal Results) presents results of the longitudinal analyses, and addresses causal hypotheses of the present study.

Chapter 9 (Discussion and Conclusion) summarizes the research findings, and also discusses their implications. Limitations and contributions of the present research will also be mentioned, along with suggestions for future research.

CHAPTER 2

THEORETICAL MODEL AND LITERATURE REVIEW

2.1 Theoretical Framework of the Present Study

In the present study, the term "conflict" is used to refer to the general discussion of negative interactions between work and family domains, whereas the term "interference" is used to describe the specific direction of negative interactions between work and family domains (that is, work-to-family interference and family-to-work inference). Furthermore, the term "enrichment" is used to refer to the general discussion of positive interactions between work and family domains, whereas the term "facilitation" is used to describe the specific direction of positive interactions between work and family domains (that is, work-to-family facilitation and family-to-work facilitation).

The theoretical framework of this study was underpinned by two related theories. Work-family conflict was underpinned by role depletion theory. This theory is closely related to the conflict perspective between work and family lives (Greenhaus & Parasuraman, 1999; Greenhaus & Powell, 2006) and the notion of resource drain (Rothbard, 2001). It suggests that people have fixed amounts of resources (e.g. time and energy) to fulfil the demands from work and family lives. When the demands in one domain are excessive, the person may need to make tradeoffs for re-allocating their limited resources. Under this condition, fewer resources are available for activities or responsibilities in another domain, which in turn may also negatively affect their well-being and performance in that domain (LePine, LePine & Saul, 2007). In addition, each direction of conflict is originated from the demands (e.g. work demands) in one domain that generate

negative consequences (e.g. lower family satisfaction) perceived in another domain (Frone, 2003; Frone et al., 1997). This direction is consistent with the current framework. Therefore, role depletion theory was adopted to support the theoretical framework of this study.

On the other hand, work-family enrichment was underpinned by role expansion theory (Grzywacz & Butler, 2005; Van Steenbergen et al., 2007). This theory assumes that participation in multiple roles may produce positive outcomes for people. Some studies (e.g. LePine, LePine & Saul, 2007) suggest that resources in one domain can be used to fulfil the demands in another domain, which in turn may enhance an individual's well-being and performance in the latter domain. In addition, positive feelings in one domain may lead to positive emotional states (e.g. happiness) perceived in another domain, and accordingly the quality of life may also be improved in the latter domain (Carlson, Kacmar, Wayne & Grzywacz, 2006). These findings imply that participation in multiple roles may build resources that safeguard people from distress and negative feelings when dealing with stressful events in work and family domains (Greenhaus & Powell, 2006). Furthermore, each direction of enrichment is originated from resources (e.g. support from a spouse) in one domain that facilitate positive outcomes (e.g. better work performance) obtained in another domain (Frone, 2003; Frone et al., 1997). This direction is also consistent with the current framework. Based on the above, role expansion theory was used to support the theoretical framework of this study.

The theoretical framework of this study (see Figure 2.1) was modified from the model of work-family conflict summarised by O'Driscoll et al. (2006). Their model suggested that job and family demands result in work-family conflict, and that work-family conflict induces negative consequences for employees. Hence,

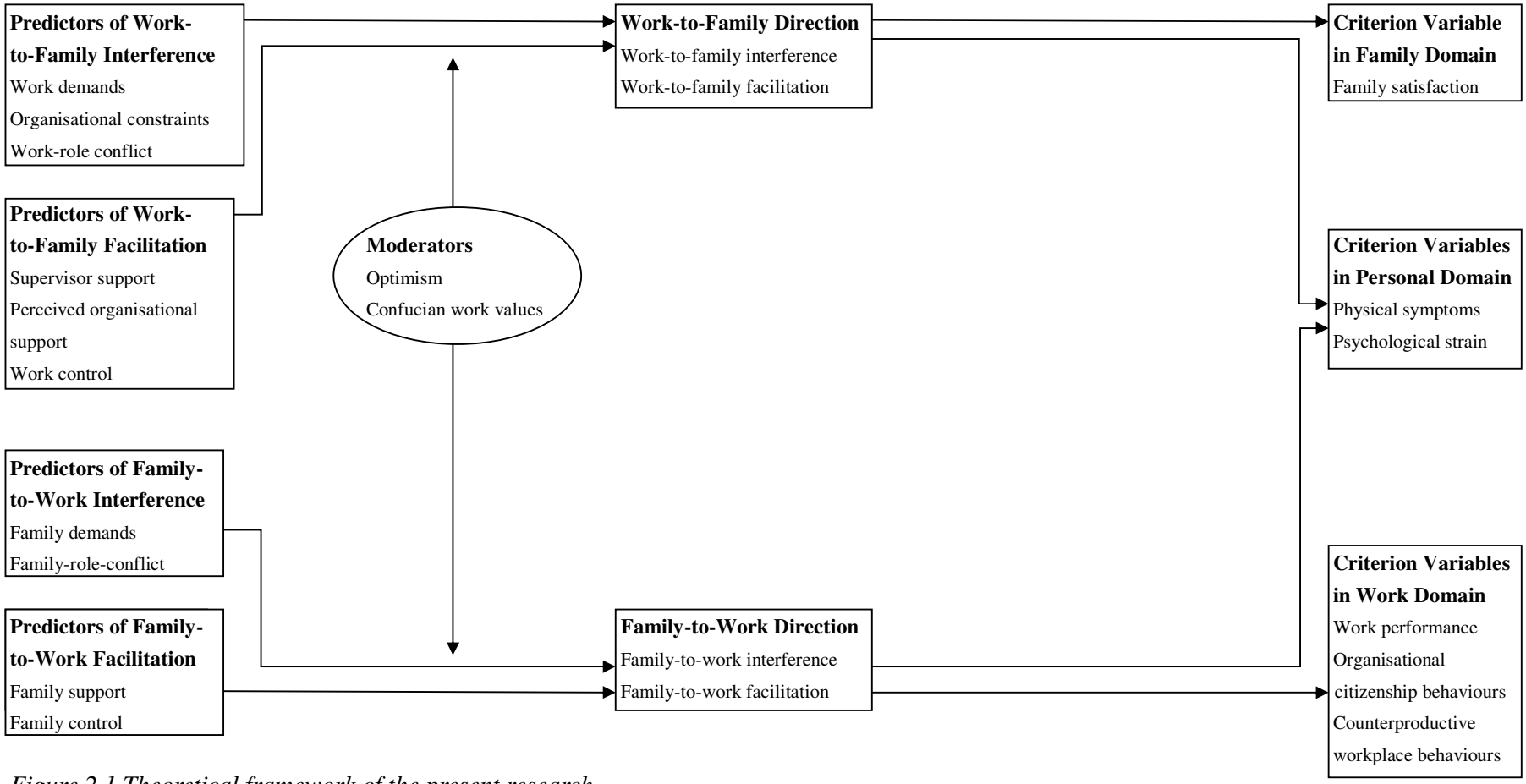


Figure 2.1 Theoretical framework of the present research

work-family conflict mediated the effects of job and family demands on negative consequences. Furthermore, the present model also contains moderating variables (e.g. personal dispositions) in relationships between antecedents and work-family conflict, and work-family conflict and consequences. The theoretical framework of this study expanded the model of O'Driscoll et al. (2006) to include both work-family conflict and enrichment.

The theoretical framework of this study included four core elements. They were: predictor variables, mediators, moderators, and several criterion variables. As mentioned earlier, each direction of conflict or enrichment should be originated from antecedents of conflict or enrichment in one domain to outcomes of conflict or enrichment in another domain (Frone, 2003; Frone et al., 1997). Therefore, this framework hypothesised that work-to-family interference and facilitation were related to family-related outcomes, whereas family-to-work interference and facilitation were related to work-related outcomes. Predictor variables were expected to be associated with work-family conflict and enrichment, and work-family conflict and enrichment were suggested to be related to the criterion variables. In keeping with O'Driscoll et al.'s (2006) model, both work-family conflict and enrichment were expected to mediate the effects of predictor variables on criterion variables. Moderating effects of optimism and Confucian work values were also explored in relationships between predictor variables and work-family conflict and enrichment, and relationships between work-family conflict and enrichment and the criterion variables.

2.2 Work-Family Conflict

Work-family conflict refers to inter-role conflict between work and family lives that contributes negative effects (e.g. poor performance) for individuals (Greenhaus & Beutell, 1985). As mentioned in Chapter 1, it consists of two

directions, work-to-family interference (WFI) and family-to-work interference (FWI). Work-to-family interference refers to work tasks or activities interfering with employees' family lives (e.g. demanding jobs that occupy an individual's time and energy), whereas family-to-work interference refers to family tasks or activities interfering with employees' work lives (e.g. employees are required to leave work early when something occurs at home). Although they are distinct, these two forms of interference are interrelated, and people who report the one are likely to also report the other direction (O'Driscoll, 2005).

Greenhaus and Beutell (1985) conceptualized three major forms of conflict: time-based, strain-based, and behaviour-based. Time-based conflict refers to time constraints within each role work and family lives. In other words, employees cannot participate in activities in one role when they spend their time on activities in another role. For employees, time demands in one role are barriers to comply with expectations arising from another role (e.g. missing family activities because of spending time on job duties), and also produce a cognitive preoccupation with one role even when individuals physically try to fulfill another role's requirements (e.g. thinking about possible solutions for family problems when attempting to meet job demands or requirements).

Strain-based conflict occurs when "roles are incompatible in the sense that the strain created by one makes it difficult to comply with the demands of another" (Greenhaus & Beutell, 1985, p.80). This definition can imply that the individuals are unable to fulfill the requirements in one domain because they perceive strain responses (e.g. feeling nervous) in another domain. For instance, employees who experience depression or fatigue at work may withdraw from family activities or tasks. Similarly, feeling upset or tense in family life may also negatively affect employees' work performance.

Behaviour-based conflict can be defined as "the display of specific behaviours in one domain that are incongruous with desired behaviours within the second domain, where norms and role expectations in one area of life are incompatible with those required in the other domain" (O'Driscoll et al., 2006, p.118). In other words, particular behavioural patterns in one role may be inconsistent with expectations of behaviour in another role, and therefore adjustments are necessary. For instance, teachers in Chinese societies are encouraged to use harsh words for criticising students' mistakes, but this strategy may not be appropriate to adopt for their friends or relatives because it may induce more arguments between both parties. If these teachers cannot make the adjustment when confronting this dilemma, they may experience the behaviour-based conflict between work and family lives.

Indeed, Kahn, Wolfe, Quinn, Snoek and Rosenthal (1964) suggested that a role is a set of expected behaviours and activities to be performed by individuals. However, most people are required to fulfill multiple roles in the same period, but it is not easy to meet all expectations from different roles because these roles may conflict with each other (Goode, 1960). Accordingly, this conflict makes it difficult for people to successfully perform all expected behaviours in different roles (Greenhaus & Beutell, 1985).

Furthermore, Voydanoff (2005) suggested that employees will regularly evaluate the effects of work and family demands and resources on their lives, which in turn will affect their work and family behaviours. In particular, she claimed that work and family demands are especially related to work-to-family interference and family-to-work interference. If employees are overloaded by excess demands in one role, they cannot easily fulfill requirements in another role. This will directly contribute to unbalanced relationships between their work and

family lives, and these employees will also perceive negative outcomes, such as poor work and family performance. Based on Voydanoff's studies (2002, 2005), the concept of work-family conflict was further explored in relation to work and family demands.

2.3 Predictors of Work-Family Conflict

2.3.1 Predictors of Work-Family Conflict in the Work Domain

Work demands are often discussed in relation to work-family conflict (Greenhaus & Beutell, 1985; Choi, 2008). Specifically, time demands at work are suggested as significant predictors of work-family conflict (Greenhaus & Beutell, 1985; O'Driscoll et al., 2006). Boyar et al. (2008) also reported that work demands were positively related to work-to-family interference. Major, Klein and Ehrhart (2002) showed that longer working hours were significant predictors of work-family conflict, and working time was also a mediator in relationships between work and family characteristics (e.g. work overload, perceived financial need) and work-family conflict. When time demands in a particular domain are increased, behavioural participation or involvement in this domain is also expected to be increased, which in turn generates lower behavioural participation or involvement in the second domain, and higher levels of work-family conflict among employees (Gutek, Searle & Klepa, 1991).

Work overload, another type of work demand, is also commonly studied in relation to work-family conflict because it refers to having too many work tasks needing to be completed within a particular time period (Rotondo & Kincaid, 2008; Hall, Dollard, Tuckey, Winefield, & Thompson, 2010). Studies (e.g. Aryee, Srinvas & Tan, 2005; Geurts, Rutte & Peeters, 1999) have shown that work overload can significantly predict time-based work-to-family interference. One of the possible reasons is that employees with high levels of work overload

cannot easily participate in various family works and activities due to insufficient time or energy.

Work-role conflict, furthermore, refers to the inability to fulfill two or more sets of expectations or requirements at work (Boyar et al., 2008), and it is also proposed to be associated with higher work-role interference because employees are required to use extra time and effort for solving this problem, which in turn may increase levels of perceived work demands (Aryee, 1992; Bellavia & Frone, 2005; Boyar et al., 2008). Previous studies (e.g. Ahmad & Masood, 2011; Herst, 2003) have shown that work-role conflict is related to time-based and strain-based work-family conflict. In particular, work-role conflict is significantly associated with work-to-family interference (Boyar et al., 2008; Grandey & Cropanzano, 1999). Boyar et al. (2003) also reported similar results in the relationship between work-role conflict and work-to-family interference. Results of a meta-analytical study by Michel, Kotrba, Mitchelson, Clark and Baltes (2011) show that work constraints, such as work demands and work-role conflict, were positively related to work-family conflict.

In Hong Kong, Wong (2004) found that organisational constraints can generate perceived work role conflict. These constraints consist of barriers, including poor equipment or supplies and lack of information, which inhibit or limit employees' performance in the workplace. Siu et al. (2005) reported that organisational constraints were positively associated with work-to-family interference. In the present study, the overall perception of organisational constraints was explored, and was also expected to provide significant effects on levels of work-to-family interference.

2.3.2 Hypotheses for Predictors of Work-Family Conflict in the Work Domain

As mentioned in Chapter 1, this study was a longitudinal study. Hypotheses of the present study were categorized in two parts: cross-sectional and longitudinal hypotheses.

Cross-sectional hypotheses

H1: Work demands will be positively related to work-to-family interference at (a) Time 1, and (b) Time 2.

H2: Work-role conflict will be positively related to work-to-family interference at (a) Time 1, and (b) Time 2.

H3: Organisational constraints will be positively related to work-to-family interference at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H4: Work demands at Time 1 will be positively related to work-to-family interference at Time 2.

H5: Work-role conflict at Time 1 will be positively related to work-to-family interference at Time 2.

H6: Organisational constraints at Time 1 will be positively related to work-to-family interference at Time 2.

2.3.3 Predictors of Work-Family Conflict in the Family Domain

Family demands are expected to be closely associated with work-family conflict. Time demands in the family domain are often discussed in relation to family-to-work interference (Greenhaus & Beutell, 1985; O'Driscoll et al., 2006). Total amount of time on family tasks or activities (e.g. household chores) is positively related to family-to-work interference (Choi, 2008; Rotondo & Kincaid, 2008). Similarly, Rothbard and Edwards (2003) reported that higher family

demands could reduce the time spent at work for female employees. The number of dependents, furthermore, is associated with work-family conflict. Previous studies (e.g. Choi, 2008; Netemeyer, Boles, & McMurrian, 1996) showed that numbers of children were positively related to family-to-work interference. In addition, Grzywacz and Marks (2000) indicated that having children was a significant predictor of family-to-work interference. Researchers (e.g. Fu & Shaffer, 2001; Madsen, 2003) explained that having more dependents (e.g. children) will directly increase levels of perceived family responsibilities (e.g. parental responsibility), which in turn may result in feeling overloaded on family duties. Therefore, family demands are expected to generate lower behavioural participation in work life, which in turn directly induces family-to-work interference (Gutek et al., 1991).

Similar to work-role conflict, family-role conflict (e.g. inability to comply with two or more sets of expectations or requirements at home) is also expected to be associated with family-to-work interference. For example, if an employee is often required to handle two or more family tasks, such as looking after children and cleaning the house, this employee is likely to feel exhausted, which in turn also negatively affects productivity in the workplace. Boyar et al. (2008) explained that family-role conflict can increase levels of family demands because employees may need to contribute extra time use and effort for dealing with different sets of expectations or requirements at home. Other studies also have shown that people perceive family-to-work interference after experiencing family-role conflict (Carlson & Kacmar, 2000; Grzywacz & Marks, 2000). In their meta-analysis, Michel et al. (2011) also reported that family constraints, such as family demands and family-role conflict, were positively related to work-family conflict.

Based on the above findings, family-role conflict is expected to have significant effects on levels of family-to-work interference.

2.3.4 Hypotheses for Predictors of Work-Family Conflict in the Family Domain

Cross-sectional hypotheses

H7: Family demands will be positively related to family-to-work interference at (a) Time 1, and (b) Time 2.

H8: Family-role conflict will be positively related to family-to-work interference at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H9: Family demands at Time 1 will be positively related to family-to-work interference at Time 2.

H10: Family-role conflict at Time 1will be positively related to family-to-work interference at Time 2.

2.4 Criterion Variables of Work-Family Conflict

2.4.1 Criterion Variables of Work-Family Conflict in the Personal and Family Domains

Supported by previous findings, it is clear that work-family conflict will lead to negative outcomes for employees. Results of a meta-analytical study by Amstad, Meier, Fasel, Elfering and Semmer (2011) show that work-family conflict was positively related to physical health symptoms and psychological health, but negatively associated with family satisfaction. Bellavia and Frone (2005) revealed that most personal outcomes from work-family conflict involve both physical and psychological health among employees. Both work-to-family interference and family-to-work interference have been found to predict poor overall physical health (Frone, Russell & Cooper, 1997, Grzywacz, 2000). For

instance, Grazywacz (2000) reported that work-to-family interference was a significant predictor of obesity, and Frone et al. (1997) found that family-to-work interference could predict the onset of hypertension. The strain induced by work-family conflict is also significantly associated with different physical health problems such as increased fatigue, increased cholesterol levels, coronary heart disease and somatic complaints (Allen et al., 2000; Haynes, Eaker & Feinleib, 1984; Thomas & Ganster, 1995). In addition, Anderson, Coffey, Liu and Zhao (2008) showed that work-family conflict was significantly related to increased levels of physical stress, such as headache and stomach upsets. Hughes and Parkes (2007) explained that work-family conflict results in poor recovery (e.g. lower participation in leisure activities) for employees due to time constraints, and accordingly it can indirectly affect employees' health status. Van Hooff, Geurts, Kompier, and Taris (2006) further showed that work-family conflict was positively related to sleep complaints.

When discussing the relationship between work-family conflict and psychological health, recent studies demonstrate that high levels of work-family conflict are linked to poor psychological well-being, such as higher depression levels (Major et al., 2002; O'Driscoll et al., 2006; Stephens, Townsend, Martire & Druley, 2001), and decreased family satisfaction (Hughes & Parkes, 2007). Frone (2000) reported that both directions of work-family conflict were positively related to mood and anxiety disorders. Siu et al. (2005) also showed that work-family conflict was positively related to psychological distress among Hong Kong and Beijing employees. In a longitudinal investigation, O'Driscoll, Brough and Kalliath (2004) observed that family-to-work interference was significantly associated with reduced psychological health.

Hughes and Parkes (2007) found that work-family conflict was negatively associated with family satisfaction. In particular, work-to-family interference was related to decreased levels of family satisfaction (Allen et al., 2000), whereas family-to-work interference was associated with lower work satisfaction (Nadeem & Abbas, 2009). It is expected that employees may have low levels of behavioural participation in either work or family domains when one domain is negatively affected by problems from another domain. Therefore, they may perceive dissatisfaction in either work or family domains. As described earlier, each direction of work-family conflict or enrichment should be associated with outcomes in the domain receiving the conflict or enrichment (Frone, 2003; Frone et al., 1997). When exploring the relationship between work-family conflict and potential consequences in the family domain, this study focused on investigating the relationship between work-to-family interference and family satisfaction.

2.4.2 Hypotheses for Criterion Variables of Work-Family Conflict in the Personal and Family Domains

Cross-sectional hypotheses

H11: Work-to-family interference will be positively associated with physical health symptoms at (a) Time 1, and (b) Time 2.

H12: Family-to-work interference will be positively associated with physical health symptoms at (a) Time 1, and (b) Time 2.

H13: Work-to-family interference will be positively associated with psychological strain at (a) Time 1, and (b) Time 2.

H14: Family-to-work interference will be positively associated with psychological strain at (a) Time 1, and (b) Time 2.

H15: Work-to-family interference will be negatively associated with family satisfaction at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H16: Work-to-family interference at Time 1 will be positively associated with physical health symptoms at Time 2.

H17: Family-to-work interference at Time 1 will be positively associated with physical health symptoms at Time 2

H18: Work-to-family interference at Time 1 will be positively associated with psychological strain at Time 2.

H19: Family-to-work interference at Time 1 will be positively associated with psychological strain at Time 2

H20: Work-to-family interference at Time 1 will be negatively associated with family satisfaction at Time 2.

2.4.3 Criterion Variables of Work-Family Conflict in the Work Domain

In their meta-analysis, Amstad et al. (2011) found that work-family conflict was negatively associated with work performance and organisational citizenship behaviours. Carlson, Grzywacz and Kacmar (2010) showed that work-family conflict was significantly related to poor work performance. Netemeyer et al (1996) showed that family-to-work interference was negatively associated with work performance. Rothbard (2001) stated that work-family conflict restricts physical and psychological resources for improving work performance. Employees are required to spend a lot of energy for regulating negative emotions when they experience that their family issues negatively influence their work (Carver & Scheier, 1981). This regulation may use up employees' energy, which in turn impairs their work performance (Piotrkowski, 1979; Rothbard, 2001).

Work-family conflict has also been found to be negatively associated with organisational citizenship behaviours (Bragger, Rodriguez-Srednicki, Kutcher, Indovino & Rosner, 2005). These behaviours can be defined as unconditional

or extra-role behaviours which provide positive effects on organisational functioning, but they are not linked with the organisational reward system (Bateman & Organ, 1983). Balmforth and Gardner (2006) suggested that employees with higher family-to-work interference might have poor work outcomes such as lower organisational commitment. It is logical to expect that these employees may not have enough time or resources to fulfill their roles at work. Therefore, they may not perform organisational citizenships behaviours when their family pressures interfere with their work, and similar results also have been replicated in other studies (e.g. Tompson & Werner, 1997).

Counterproductive workplace behaviours, the opposite of organisational citizenship behaviours, are also expected to be linked with work-family conflict. These behaviours can be defined as detrimental or potentially destructive actions which hurt colleagues or violate central organisational policies, rules, and procedures (Miles, Borman, Spector & Fox, 2002). These behaviours include various acts with the potential for harm, such as aggression and hostility which are aimed at people, or avoiding work and incorrectly doing tasks which are aimed at the organization (Spector & Fox, 2002). As Spector, Fox, Penney, Bruursema, Goh and Kessler (2006) stated, withdrawal behaviours such as voluntary absenteeism are examples of counterproductive workplace behaviours. Anderson et al. (2010) stated that some withdrawal behaviours (e.g. absenteeism) could be induced by family responsibilities interfering with work. In particular, Hammer, Bauer and Grandey (2003) found that family-to-work interference was associated with increased levels of withdrawal behaviours. They argued that employees who perceive higher family demands (e.g. caring for many dependents at home) may need to seek extra resources and time from the work domain in order to satisfy the above demands. Accordingly, conflict between work and

family domain is induced, and the employees may perform more withdrawal actions (e.g. leaving work early) in the organisation.

This study did not investigate the relationships between work-family conflict and enrichment and job satisfaction, although the relationships between work-family conflict and enrichment and family satisfaction were examined. Numerous studies have found that work-family conflict is consistently associated with decreased job satisfaction (Aryee, Fields & Luk, 1999; Burke & Greenglass, 1999; Carlson & Kacmar, 2000), whereas work-family enrichment is consistently related to increased job satisfaction (Balmforth & Gardner, 2006; Grzywacz, 2002). These findings support that work-family conflict and enrichment can contribute significant effects on job satisfaction. In order to further explore potential effects of work-family conflict and enrichment in relation to other work outcomes of employees, the relationships between work-family conflict and enrichment and job satisfaction were not repeatedly examined, whereas the relationships between work-family conflict and enrichment, and work performance, organizational citizenship behaviours and counterproductive workplace behaviours were investigated in the present study.

2.4.4 Hypotheses for Criterion Variables of Work-Family Conflict in the Work Domain

Cross-sectional hypotheses

H21: Family-to-work interference will be negatively related to work performance at (a) Time 1, and (b) Time 2.

H22: Family-to-work interference will be negatively associated with organisational citizenship behaviours at (a) Time 1, and (b) Time 2.

H23: Family-to-work interference will be positively associated with counterproductive workplace behaviours at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H24: Family-to-work interference at Time 1 will be negatively related to work performance at Time 2.

H25: Family-to-work interference at Time 1 will be negatively associated with organisational citizenship behaviours at Time 2.

H26: Family-to-work interference at Time 1 will be positively associated with counterproductive workplace behaviours at Time 2.

2.5 Work-Family Enrichment

Work-family enrichment can be defined as "the extent to which participation at work (or home) is made easier by virtue of the experiences, skills, and opportunities gained or developed at home (or work)" (Frone, 2003, p.145). Voydanoff (2004) suggested that work-family enrichment can allow people to utilise resources in one domain for enhancing levels of participation in another domain. O'Driscoll et al. (2006) further concluded that involvement in either work or family domain can enhance the participation or engagement in the other domain. For example, support from members at home is a source of strength when encountering work challenges (Grzywacz & Marks, 2000).

As described earlier, work-family enrichment is also bidirectional, including work-to-family facilitation and family-to-work facilitation (Frone, 2003). Work-to-family facilitation refers to work tasks or activities that can enhance participation in family life (e.g. flexibility of work allows employees to spend more time at home), whereas family-to-work facilitation refers to family tasks or activities that can enhance participation in work life (e.g. feeling good at home allows employees to have a better mood at work).

Recent studies propose that work-family enrichment is fundamentally rooted in role expansion theory (Grzywacz & Butler, 2005; Van Steenbergen et al., 2007).

As mentioned earlier, this theory is adopted to underpin the theoretical framework of this study. Sieber (1974) suggested that role accumulation can provide a substantial benefit for employees, and Marks (1977) claimed that human energy is expandable when participation in one role induces a positive effect on other role behaviours. In other words, combining multiple roles does not necessarily generate interrole conflict and other negative outcomes (Van Steenbergen et al., 2007). Conversely, participation in one domain can benefit participation in another domain (Geurts & Demerouti, 2003). Barnett and Hyde (2001) explained that active participation in one role enables access to resources and experiences which contribute to fulfillment among individuals. For instance, employees who have combined multiple roles report higher job satisfaction, organisational commitment, and better health (Kirchmeyer, 1992; Moen, Dempster-McClain & Williams, 1992). Greenhaus and Powell (2006) suggested that these positive outcomes are elicited in the following ways.

Firstly, combining multiple roles can provide more positive effects for employees' well-being. Barnett and Hyde (2001) have shown that role accumulation can contribute to better physical and psychological well-being. Other studies (e.g. Rice, Frone & McFarlin, 1992) also indicated that employees who have participated in, and are satisfied with both work and family roles will experience better well-being, such as higher happiness and life satisfaction. Barnett and Baruch (1985) suggested that role accumulation can provide rewards (e.g. opportunities for exploring social relationships) which energise people to fulfill their responsibilities in different life domains. Accordingly, individuals' well-being may also be improved by the combination of work and family roles (Barnett, Marshall & Pleck, 1992).

Secondly, involvement in one role can buffer the effects of distress in another role. Barnett, Marshall, and Sayer (1992) reported that the relationship between work stress and poor well-being is weakened for individuals with more satisfying and high-quality family life. In addition, the relationship between family stress and poor well-being is also attenuated for individuals with more satisfying work experience (Barnett et al., 1992). Greenhaus and Powell (2006) stated that a diverse set of social roles is able to buffer individuals' negative feelings occurring in a particular role. For example, employees with higher satisfaction from multiple roles in different domains can protect their well-being, although they may feel frustrated due to the adversity in one segment of their lives.

Finally, involvement in one role can generate positive experiences and outcomes in another role. As mentioned earlier, participation in one role can create human energy, and also be used to facilitate positive experiences in another role (Marks, 1977). Greenhaus and Powell (2006) also believed that experiences in one role can improve the quality of life in another role. Furthermore, Sieber (1974) suggested that resources acquired from one role can also be reinvested, which in turn generates positive outcomes in another role. For instance, personal skills (e.g. communication skills) obtained in the family role can improve the quality of work life, in particular maintaining good interpersonal relationships at work. This is an example of family-to-work facilitation. Similarly, this effect can also occur from the work domain to the family domain, that is work-to-family facilitation (Greenhaus & Powell, 2006).

Fredrickson (1998) suggested the broaden-and-build theory that individuals with certain positive emotions, such as joy and satisfaction, can broaden their thoughts (e.g. action planning) and personal resources (e.g. social networks). Related findings show that individuals with positive emotions express more

creative ideas (Isen, Daubman & Nowicki, 1987) and open to information (Estrada, Isen & Young, 1997). These people also tend to have higher flexibility (Isen & Daubman, 1984). Supported by the above literature, it is expected that employees perceiving positive emotions in one domain may have more ideas and resources to effectively handle their duties not only in the same domain, but also possibly in another domain.

2.6 Predictors of Work-Family Enrichment

2.6.1 Predictors of Work-Family Enrichment in the Work Domain

Findings of a systematic review by Crain and Hammer (2013) show that work support and control were positively associated with work-family enrichment. Clark (2000) suggested that assets, commodities or materials in the environment and interpersonal activities are potential factors in work-family enrichment, and O'Driscoll et al. (2006) found that increased resources in different life domains can enhance the possibility of work-family enrichment. In terms of the work context, resources and support for enhancing levels of work-family enrichment are closely related to the employee's organisation. Brough et al. (2005) reported that family-friendly employment policies and practices (e.g. flexible working hours and compressed work week) were significantly related to positive outcomes among employees. Aryee et al. (2005) also pointed out that support from one's supervisor at work is a form of social support which may enhance perceived work-family enrichment.

As mentioned earlier, a family-supportive work environment is significantly linked with high levels of organisational commitment, and job and family satisfaction (Allen et al., 2000). This supportive environment is mainly formed by flexible work arrangements such as a compressed work week and flexible work schedule (Siu & Phillips, 2007). These arrangements are provided by the

organisation (Carlson et al., 2010), and they allow employees to have discretion on when, where, and how long they work (Hill, Grzywacz, Allen, Blanchard, Matz-Costam, Shulkin & Pitt-Catsouphes, 2008; Lewis, 2003). Greenhaus and Parasuraman (1999) pointed out that a supportive environment provided by the organisation can enhance levels of flexibility and direct help at work, which in turn facilitate the integration between work and family roles. Voydanoff (2005) also agreed that perceived flexibility is important for accommodating demands inside and outside the workplace. Furthermore, Carlson et al. (2010) stated that flexible work arrangements can not only reduce work-family conflict, but also increase work-family enrichment, which in turn may result in increased satisfaction, and better performance in the work and family domains. Other studies (e.g. Baral & Bhargava, 2010) also reported that perceived support from the organisation is positively associated with work-family enrichment.

Work control is also associated with work-family enrichment. Perceived control refers to the belief that individuals can either directly or indirectly have a significant influence over the environment, which in turn enables the environment to become more rewarding and less threatening for them (Ganster & Fusilier, 1989). As O'Driscoll et al. (2006) stated, perceived control either in work or family lives allow resources in one domain (e.g. work) to be utilized in another domain (e.g. family), which in turn provides a positive effect on work-family enrichment. Some studies (e.g. Grzywacz & Bulter, 2005; Grzywacz & Marks, 2000) reported that work control is positively related to work-to-family facilitation. Similar findings were reported by Thompson and Prottas (2005). These results indicate that perceived work control can allow employees to mobilize work resources (e.g. time or manpower) for solving family problems,

such as being able to freely adjust work hours for looking after family dependents. Accordingly, work control may relate to increased work-family enrichment.

2.6.2 Hypotheses for Predictors of Work-Family Enrichment in the Work Domain

Cross-sectional hypotheses

H27: Supervisor support will be positively related to work-to-family facilitation at (a) Time 1, and (b) Time 2.

H28: Perceived organisational support will be positively related to work-to-family facilitation at (a) Time 1, and (b) Time 2.

H29: Work control will be positively related to work-to-family facilitation at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H30: Supervisor support at Time 1will be positively related to work-to-family facilitation at Time 2.

H31: Perceived organisational support at Time 1will be positively related to work-to-family facilitation at Time 2.

H32: Work control at Time 1 will be positively related to work-to-family facilitation at Time 2.

2.6.3 Predictors of Work-Family Enrichment in the Family Domain

Focusing on the family context, Crain and Hammer (2013) also found that family support and control were positively related to work-to-family enrichment. Some studies showed that the support provided by family relatives is positively related to work-family enrichment. For instance, Grzywacz and Marks (2000) found that increased levels of emotional support from the family were associated with positive spillover between work and family domains among employees. Aryee et al. (2005) also suggested that support from the family (e.g. from a spouse)

was significantly associated with increased levels of family-to-work facilitation. Similar findings were also shown by Siu and her colleagues (2010). Indeed, previous findings indicate that support from family members is a significant element for dealing with different job challenges (Crouter, 1984; Kirchmeyer, 1992a), and it can be used to tackle various work strains (e.g. burnout) (Halbesleben & Buckley, 2004), and to increase individuals' work performance (Grzywacz & Marks, 2000).

Perceived control in family life is also discussed in relation to work-family enrichment. Edwards and Rothbard (1999) defined family control as perceived control over the nature and content of one's activities in family life. They found that family control was significantly linked with outcomes of work-family enrichment, such as increased job and family satisfaction, and better physical and psychological health. Similar to work control, family control enables people to master family resources for addressing problems at work, such as being able to freely adjust the schedule of family activities due to work assignments. Shimada, Shimazu, Bakker, Demerouti and Kawakami (2010) also found that family control was positively associated with family-to-work facilitation.

2.6.4 Hypotheses for Predictors of Work-Family Enrichment in the Family Domain

Cross-sectional hypotheses

H33: Family support will be positively associated with family-to-work facilitation at (a) Time 1, and (b) Time 2.

H34: Family control will be positively associated with family-to-work facilitation at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H35: Family support at Time 1 will be positively associated with family-to-work facilitation at Time 2.

H36: Family control at Time 1 will be positively associated with family-to-work facilitation at Time 2.

2.7 Criterion Variables of Work-Family Enrichment

2.7.1 Criterion Variables of Work-Family Enrichment in the Personal and Family Domains

Based on previous studies, work-family enrichment may contribute positive outcomes for employees. Results of a meta-analytical review by McNall, Micklin and Masuda (2010) show that work-family enrichment was positively related to physical and psychological health, and family satisfaction. Positive health outcomes have often been discussed in relation to work-family enrichment (Frone, 2003, Grzywacz, 2002, O'Driscoll et al., 2006). Work-family enrichment is associated with improved physical and mental health (Grzywacz, 2000, 2002). As discussed earlier, perceived flexibility is one of the main sources of work-family enrichment, and it allows employees to effectively integrate job responsibilities with other duties outside the workplace (Carlson et al., 2010). Accordingly, employees with higher flexibility are expected to perceive lower stress than others (Casey & Grzywacz, 2008). Other studies (e.g. Thomas & Ganster, 1985) also suggested that perceived flexibility was associated with fewer somatic complaints.

Concerning psychological health, Van Steenbergen et al. (2007) found that both directions of facilitation were significantly associated with lower emotional exhaustion and depressive complaints. Stephens, Franks and Atienza (1997) reported that work-to-family facilitation was positively related to psychological

health. Other studies (e.g. Grzywacz & Bass, 2003; Grzywacz & Marks, 2000) also found that family-to-work facilitation was associated with lower risk of depression and problem drinking. As Wethington and Kessler (1989) indicated, employees who participated in multiple roles reported lower psychological distress. These findings are consistent with Greenhaus and Powell's (2006) suggestions on the potential positive outcomes of work-family enrichment.

Focusing on family satisfaction, Van Steenbergen et al. (2007) indicated that work-to-family facilitation was significantly related to increased levels of family satisfaction. Similar findings were also shown by Thompson and Prottas (2005). As Carlson et al. (2010) stated, work-family enrichment can result in positive emotional experience, which in turn may contribute more satisfaction in different life domains. In the present study, the relationship between work-to-family facilitation and family satisfaction was investigated when studying the relationships between work-family enrichment and potential consequences in the family domain.

2.7.2 Hypotheses for Criterion Variables of Work-Family Enrichment in the Personal and Family Domains

Cross-sectional hypotheses

H37: Work-to-family facilitation will be negatively related to physical health symptoms at (a) Time 1, and (b) Time 2.

H38: Family-to-work facilitation will be negatively related to physical health symptoms at (a) Time 1, and (b) Time 2.

H39: Work-to-family facilitation will be negatively associated with psychological strain at (a) Time 1, and (b) Time 2.

H40: Family-to-work facilitation will be negatively related to psychological strain at (a) Time 1, and (b) Time 2.

H41: Work-to-family facilitation will be positively associated with family satisfaction at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H42: Work-to-family facilitation at Time 1 will be negatively related to physical health symptoms at Time 2.

H43: Family-to-work facilitation at Time 1 will be negatively associated with physical health symptoms at Time 2.

H44: Work-to-family facilitation at Time 1 will be negatively related to psychological strain at Time 2.

H45: Family-to-work facilitation at Time 1 will be negatively related to psychological strain at Time 2

H46: Work-to-family facilitation at Time 1 will be positively associated with family satisfaction at Time 2.

2.7.3 Criterion Variables of Work-Family Enrichment in the Work Domain

Similar to work-family conflict, work-family enrichment is also expected to provide a significant effect on work outcomes for employees. Crain and Hammer (2013) found that work-family enrichment was positively related to work performance and organisational citizenship behaviours. Grzywacz (2002) claimed that work-family enrichment is linked with the productivity of employees. For instance, Van Steenbergen et al. (2007) reported that family-to-work facilitation is positively associated with self-rated work performance. In addition to work performance, work-family enrichment is also positively related to organisational citizenship behaviours (Balmforth & Gardner, 2006; Baral & Bhargava, 2010). Demerouti, Bakker, and Voydanoff (2010) explained that employees with higher work-family enrichment perceive more resources and support to deal with work demands and challenges, and accordingly it is expected

these employees may have higher productivity or more positive contributions in the organisation. Based on the arguments of Hammer et al. (2003), employees may not perform destructive behaviours in the organisation when they perceive enough support and resources to tackle work problems. Although related studies discussing the relationship between work-family enrichment and counterproductive workplace behaviours are rare, it is logical to expect that work-family enrichment is negatively related to counterproductive workplace behaviours.

As discussed earlier (page 24), the relationships between work-family enrichment and job satisfaction were not assessed in the present study.

2.7.4 Hypotheses for Criterion Variables of Work-Family Enrichment in the Work Domain

Cross-sectional hypotheses

H47: Family-to-work facilitation will be positively related to work performance at (a) Time 1, and (b) Time 2.

H48: Family-to-work facilitation will be positively associated with organisational citizenship behaviours at (a) Time 1, and (b) Time 2.

H49: Family-to-work facilitation will be negatively related to counterproductive workplace behaviours at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H50: Family-to-work facilitation at Time 1 will be positively related to work performance at Time 2.

H51: Family-to-work facilitation at Time 1 will be positively associated with organisational citizenship behaviours at Time 2.

H52: Family-to-work facilitation at Time 1 will be negatively related to counterproductive workplace behaviours at Time 2.

2.8 Chapter Summary

This chapter described the theoretical model, and cross-sectional and longitudinal hypotheses between predictor variables, work-family conflict and enrichment, criterion variables and moderator variables in the present study. Supported by previous findings, this study suggested cross-sectional and longitudinal hypotheses of direct relationships between predictor variables and work-family conflict and enrichment, and between work-family conflict and enrichment and criterion variables. The next chapter (Chapter 3) provides a review of previous literature on the mediating effects of work-family conflict and enrichment, and the moderating effects of optimism and Confucian work values. Related hypotheses are also presented in this chapter.

CHAPTER 3

MEDIATION AND MODERATION

Referring to Figure 2.1 (page 13), this study explored the mediating effects of work-family conflict and enrichment, and the moderating effects of optimism and Confucian work values on the relationships between predictor variables and work-family conflict and enrichment. The literature and hypotheses relating to the proposed mediating and moderating effects are discussed in this chapter.

Kline (2005) suggested that mediators can transmit some of the causal effects of predictor variables onto criterion variables. Some work-family conflict studies (e.g. Boyar et al. 2008; Greenhaus & Beutell, 1985; Rotondo & Kincaid, 2008) have shown that work and family demands are positively related to different forms of work-family conflict, and that work-family conflict is associated with negative outcomes for individuals, such as psychological distress (Major et al., 2002) and poor work performance (Netemeyer et al., 1996). In addition, negative emotional responses (e.g. dissatisfaction, frustration) resulting from inter-role conflict between work and family domains can spill over to other life domains (Jackson, Zedeck & Summers, 1985). Consequently, these negative emotional responses inhibit individuals' role performance in either domain, such as poor work performance (Demerouti, Bakker & Voydanoff; 2010), and may also result in worse physical and psychological health (Choi, 2008; Rothbard, 2001).

Similar to work-family conflict, mediating effects of work-family enrichment were expected in the present research. As discussed in Chapter 2, resources and supports from work and family domains are positively associated with work-family enrichment, and the latter variable is also related to positive outcomes (e.g. better health status) for individuals. Tang (2010) stated that

resources and supports provided by supervisors and the organisation can help employees to effectively balance work and family demands, which in turn result in better physical and psychological health. In addition, work-family enrichment may increase levels of perceived control over work-family matters (Friedman & Greenhaus, 2000), and consequently reduce the negative effects induced by conflict between work and family domains (Barnett, Marshall & Sayer, 1992).

The present study explored the longitudinal mediating effects of work-family conflict and enrichment. In particular, it investigated the longitudinal relationship between predictor variables at Time 1 and mediators at Time 2, and mediation effects on criterion variables at Time 2. As suggested by Cole and Maxwell (2003) and MacKinnon (1994), work-family conflict and enrichment at Time 2 were examined as mediators between predictor variables at Time 1 and criterion variables at Time 2, and it investigates whether predictor variables at Time 1 would contribute significant effects on criterion variables at Time 2. Although there are some studies (e.g. Choi, 2008; Tang, 2010) showing the mediating effects of work-family conflict and enrichment between predictor and criterion variables in Chinese societies, these were cross-sectional studies. By using longitudinal analysis, this study investigated those effects over a period of time rather than only cross-sectional effects. As described in chapter 1, the time interval between Time 1 and Time 2 data collections was ten months because this time lapse enabled me to examine the longitudinal effects of predictor variables on criterion variables (Lu, 2011).

3.1 Mediating Effects of Work-Family Conflict

Previous findings (e.g. Choi, 2008; Ngah et al., 2009) indicate that work-family conflict is able to provide both full and partial mediating effects in work and family domains. For instance, Haines, Marchand, Rousseau and

Demers (2008) reported that work-to-family interference had a partial mediating effect in the relationship between shiftwork and depression. They claimed that shiftwork is associated with greater work-to-family interference, which in turn may result in more depressive symptoms for employees. Concerning the family domain, Choi (2008) found that work-family conflict fully mediated the effects of family demands on life stress among Chinese employees. He explained that work and family demands and work-family conflict are positively related to life stress, and the latter is also associated with increased levels of negative emotions such as frustration and dissatisfaction for Chinese employees. Accordingly, it is logical to expect that effects of family demands on life stress could be amplified by the mediation of work-family conflict.

3.2 Hypotheses for Mediating Effects of Work-Family Conflict

Based on the above studies, the present study tested the hypotheses that:

H53: Work-to-family interference at Time 2 will mediate the effects of work demands at Time 1 on (a) physical health symptoms, (b) psychological strain, and (c) family satisfaction at Time 2.

H54: Work-to-family interference at Time 2 will mediate the effects of work-role conflict at Time 1 on (a) physical health symptoms, (b) psychological strain, and (c) family satisfaction at Time 2.

H55: Work-to-family interference at Time 2 will mediate the effects of organisational constraints at Time 1 on (a) physical health symptoms, (b) psychological strain, and (c) family satisfaction at Time 2.

H56: Family-to-work interference at Time 2 will mediate the effects of family demands at Time 1 on (a) physical health symptoms, (b) psychological strain, (c) work performance, (d) organisational

citizenship behaviours, and (e) counterproductive workplace behaviours at Time 2.

H57: Family-to-work interference at Time 2 will mediate the effects of family-role conflict at Time 1 (a) physical health symptoms, (b) psychological strain, (c) work performance, (d) organisational citizenship behaviours, and (e) counterproductive workplace behaviours at Time 2.

3.3 Mediating Effects of Work-Family Enrichment

As stated in Chapter 2 (page 11), the term "enrichment" is used to refer to positive interactions generally between work and family domains, whereas the term "facilitation" is used to describe the specific direction of positive interactions between work and family domains when discussing the findings of work-family enrichment. Previous findings showed that work-to-family facilitation could partially mediate the effects of work support on intention to say (Mustapha et al., 2011) and psychological health (Tang, 2010). The potential reason is that work-to-family facilitation can strengthen the effects of work resources (e.g. support from other people at work) on tackling work challenges (Mustapha et al., 2011. Therefore, the employees with work-to-family facilitation may tend to have more satisfaction at work, which in turn may also enhance physical and psychological well-being for those employees (Tang, 2010).

Although the literature on mediating effects for family-to-work facilitation is sparse, Allis and O'Driscoll (2008) reported that family-to-work facilitation was a mediator in the relationships between family involvement and positive work well-being (e.g. optimism at work). In other words, levels of positive work well-being are higher when people report higher family-to-work facilitation from participating in family activities. Other studies (Eden, 2001; Voydanoff, 2004)

indicated that positive events (e.g. social gathering) in nonwork domains can induce positive psychological responses (e.g. positive emotional experience), and these responses can have a positive effect on attitudes and behaviours at work. Accordingly, individuals' well-being will be improved.

3.4 Hypotheses for Mediating Effects of Work-Family Enrichment

Supported by the above findings, the present study tested the hypotheses that:

H58: Work-to-family facilitation at Time 2 will mediate the effects of supervisor support at Time 1 on (a) physical health symptoms, (b) psychological strain, and (c) family satisfaction at Time 2.

H59: Work-to-family facilitation at Time 2 will mediate the effects of perceived organisational support at Time 1 on (a) physical health symptoms, (b) psychological strain, and (c) family satisfaction at Time 2.

H60: Work-to-family facilitation at Time 2 will mediate the effects of work control at Time 1 on (a) physical health symptoms, (b) psychological strain, and (c) family satisfaction at Time 2.

H61: Family-to-work facilitation at Time 2 will mediate the effects of family support at Time 1 on (a) physical health symptoms, (b) psychological strain, (c) work performance, (d) organisational citizenship behaviours, and (e) counterproductive workplace behaviours at Time 2.

H62: Family-to-work facilitation at Time 2 will mediate the effects of family control at Time 1 on (a) physical health symptoms, (b) psychological strain, (c) work performance, (d) organisational citizenship behaviours, and (e) counterproductive workplace behaviours at Time 2.

3.5 Moderating Effects

O'Driscoll et al.'s (2006) model suggested that personal variables, such as personal dispositions, can moderate relationships between work and family demands and work-family conflict, and previous studies (e.g. Carlson et al., 2010) also have shown the moderating effects of personal variables (e.g. gender) in the above relationships. Similar to work-family conflict, the moderating role of gender has also been found in the relationship between organisational support (e.g. work-family balance policies) and work-family enrichment (Baral & Bhargava, 2011). In particular, the relationship between work-family balance policies and work-family enrichment is stronger for females when comparing with males. Therefore, it is expected that moderating effects would be found in relationships between predictor variables and work-family conflict and enrichment.

The proposed model of this study (Figure 2.1) is consistent with previous research (e.g. Carlson et al., 2010; Hugues & Parkes, 2007) which simultaneously investigated the mediating effects of work-family conflict and enrichment, and moderating effects in the process of work-family conflict and enrichment. This model also hypothesised optimism and Confucian work values were as potential moderators. Previous findings indicate that optimism buffered the effects of work stressors on mental health (Mäkikangas & Kinnunen, 2003), and Confucian work values could mitigate the effects of work stressors on work performance (Siu et al., 2003). These results support that optimism and Confucian work values may contribute significant moderating effects in relation to organizational issues, which in turn can benefit employees and the organisation. However, the effects of optimism and Confucian work values are rarely examined in previous Chinese work-family studies. Supported by the above literature, the present study explored the moderating effects of optimism and Confucian work values in the

relationships between predictor variables and work-family conflict and enrichment. The findings of this study may also provide additional information to understand work-family balance in the Chinese context.

3.5.1 Moderating Effects of Optimism

Optimism is defined as a personal expectancy that good outcomes will finally happen, and bad outcomes will not occur in the future (Scheier & Carver, 1985, 1992). Scheier and Carver (1992) claimed that individuals' actions and behaviours are mainly influenced by their expectations, and therefore individuals who expect desirable outcomes will tend to strive toward these outcomes even when they are difficult to achieve. Conversely, people who expect desirable outcomes to be unattainable will tend to withdraw from pursuit of these outcomes. In other words, individuals' levels of optimism may directly affect whether or not they will continue when the task is difficult (Scheier & Carver, 1985).

Individuals with higher optimism will show better adjustment and psychological health because they tend to use adaptive problem-focused coping strategies which are significantly related to the above positive outcomes (Aspinwall & Taylor, 1992; Carver, Scheier & Weintraub, 1989; Chan, Lai & Wong, 2006). In addition, optimism has also been found to positively predict performance, coping and health outcomes (Scheier & Carver, 1985; Seligman & Schulman, 1986).

Based the above literature, optimism may be associated with both work-family conflict and enrichment. Previous studies (e.g. Aryee et al., 2005) supported that optimism was negatively associated with family-to-work interference. Other studies (e.g. Dyson-Washington, 2006) also indicated that it was positively related to family-to-work facilitation. As mentioned before, people with higher scores on optimism will be likely to use problem-focused

coping strategies, and to explore more social support for addressing stressful situations (Carver et al., 1989; Aryee et al., 2005). Therefore, these people are expected to report lower scores on work-family conflict and higher scores on work-family enrichment.

In addition, optimism has been suggested to moderate the relationships between daily hassles and physiological symptoms (Lai, 1996), and perceived stress and psychological well-being (Chang, 1998). Specifically, Hayes and Weathington (2007) showed that optimism could act as a buffer against the negative effects of stress. Compared with pessimists, optimists appear to quickly accept the reality of challenges to their daily lives, and tackle those challenges in a productive way (Carver & Scheier, 2003). These people are also less likely to show signs of disengagement or giving up on their goals when confronting adversity (Scheier, Carver & Bridges, 2001). Consequently, they may report better health outcomes and performance in different aspects of daily living (Carver & Scheier, 2003). To the best of my knowledge, this study is the first to explore the moderating effects of optimism simultaneously on work-family conflict and enrichment in Hong Kong. The above findings show that optimism provides a significant moderating effect in certain circumstances, and therefore this personal disposition may also moderate the relationships between this study's predictor variables and work-family conflict and enrichment.

3.5.2 Hypotheses for Moderating Effects of Optimism

Cross-sectional hypotheses

H63: The positive relationship between family demands and family-to-work interference will be moderated by optimism. That is, high levels of optimism will reduce the effects of family demands on family-to-work interference at (a) Time 1, and (b) Time 2.

H64: The positive relationship between family-role conflict and family-to-work interference will be moderated by optimism. That is, high levels of optimism will reduce the effects of family-role conflict on family-to-work interference at (a) Time 1, and (b) Time 2.

H65: The positive relationship between family support and family-to-work facilitation will be moderated by optimism. That is, high levels of optimism will increase the effects of family support on family-to-work facilitation at (a) Time 1, and (b) Time 2.

H66: The positive relationship between family control and family-to-work facilitation will be moderated by optimism. That is, high levels of optimism will increase the effects of family control on family-to-work facilitation at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H67: The positive relationship between family demands at Time 1 and family-to-work interference at Time 2 will be moderated by optimism at Time 2. High levels of optimism at Time 2 will reduce the effects of family demands at Time 1 on family-to-work interference at Time 2.

H68: The positive relationship between family-role conflict at Time 1 and family-to-work interference at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will reduce the effects of family-role conflict at Time 1 on family-to-work interference at Time 2.

H69: The positive relationship between family support at Time 1 and family-to-work facilitation at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will increase the

effects of family support at Time 1 on family-to-work facilitation at Time 2.

H70: The positive relationship between family control at Time 1 and family-to-work facilitation at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will increase the effects of family control at Time 1 on family-to-work facilitation at Time 2.

3.5.3 Moderating Effects of Confucian Work Values

Confucianism has had over-arching effects on individuals, families, and social and political lives in Chinese societies for more than 2000 years (Morton & Lewis, 2005; Peng & Wang, 2005), and it also enhances harmony at all levels of interpersonal relationships (Bhasin, 2007). In addition, Confucianism emphasizes meeting material needs (e.g. housing) for family relatives, and honouring self and family by having work achievements (Sun, 2008). Previous studies suggested that Confucian work values are key factors contributing to the economic growth in different places of Asia, including Hong Kong and Taiwan (Kahn, 1979; MacFarquhar, 1980; Yeung & Tung, 1996). Confucian work values include collectivism, hard work, *guanxi* (relationships and interpersonal connections), and endurance, which are closely rooted in Confucianism (Chao, 1990). However, levels of Confucian work values vary between individuals due to demographic factors, such as historical development of the societies and education background of the individuals (Siu et al, 2005). In particular, Hong Kong employees have been found to report lower Confucian work values than other Chinese employees (Siu et al. 2005). The potential explanation is that Hong Kong was a British colony for more than 150 years, and colonisation shaped the living style of Hong Kong people which is different from other Chinese

people (Siu et al, 2003). Accordingly, this reason may mitigate the effects of Confucianism for Hong Kong employees.

In order to systematically explore components of Confucian work values, Huang, Eveleth and Huo (1998) developed a measure named the "CGF-LEACH" instrument. The "CGF" factor includes three elements of *credentialism* (e.g. "diplomas and credentials are still criteria used to judge the ability of a person"), *guanxi* (e.g. "good connection allows me to have more information and opportunities"), and *functionalism* (e.g. "one should only select the way that actually helps to reach his or her goals") that help Chinese employees to effectively plan on how to accomplish work tasks. The "LEACH" factor contains the elements of *long-term orientation* (e.g. "I will set a few goals for my life-time constant pursuit"), *endurance* (e.g. "I should tolerate others to keep harmony"), *authoritarianism* (e.g. "it is prudent and correct if I comply with the line of authority"), *collectivism* (e.g. "making use of the power of a group is more effective than doing work alone"), and *hardworking* (e.g. "hardworking people are recognized and supported"), which assist employees in successfully finishing their tasks (Huang et al., 1998). In the present study, the short form of the "CGF-LEACH" instrument validated by Lu, Kao, Chow and Siu (2001) was used to measure Confucian work values among Hong Kong employees (see page 93).

There are very few studies examining the effects of Confucian work values for employees. However, these values have been associated with decreased physical and mental health complaints (Siu et al., 2005), increased job satisfaction (Siu, et.al, 2003), and better work performance (Siu, 2003). Lu et al. (2011) explained that Confucian work values can cultivate people to become responsible, dedicated, and motivated employees, which in turn may results in positive impacts (e.g. better work performance) for not only employees but also the organisation.

Related studies have shown that Confucian work values can buffer the negative effects of stress on work performance (Siu, 2003), and job satisfaction (Siu et al., 2005). These values are suggested to overlap with self-efficacy, internal locus of control, and hardiness, and accordingly employees with higher Confucian work values tend to be intrinsically motivated, hardworking, and enduring at work (Siu et al., 2003). In addition, Confucian work values allow employees to have more harmonious work relationships, which in turn may generate more social resources for tackling work problems (Lu et al., 2011). Confucian work values can provide positive effects for employees' work well-being (Siu et al., 2003).

To the best of my knowledge, the present study was the first to explore relationships between Confucian work values and both work-family conflict and enrichment in Hong Kong, although a few studies (e.g. Siu et al., 2005) have investigated the relationships between Confucian work values and home/work interface in Hong Kong and Beijing. Some researchers (e.g. Powell, Francesco & Ling, 2009; Kwan, Mao & Zhang, 2010) argue that cultural influences on work-family conflict and enrichment have not been fully explored in the Chinese context, although these influences are recognized as important factors for work-family conflict and enrichment. In responding to the above literature, this study further explored the relationships between Chinese cultural values and work-family conflict and enrichment.

Based on the above findings, it is expected that employees with higher Confucian work values will perceive lower work-family conflict and higher work-family enrichment than their counterparts with lower Confucian work values. Lu (2006) suggested that complying with Confucian work values reflects a congruence between the individual and social environment, and therefore it can

facilitate individuals to have better personal adjustment when confronting adversity. As mentioned earlier, employees with higher Confucian work values may have more social support, which in turn can generate more resources to solve problems at work (Siu et al. 2005). Therefore, it is predicted these values can reduce the negative effects for work-family conflict.

In addition, Confucian work values not only overlap with self-efficacy and resilience (Lu et al., 2011; Siu, 2003), but also are significantly associated with perceived work control, which is a key factor to enhance levels work-family enrichment (Siu et al., 2005). Supported by these findings, it is expected that Confucian work values can amplify the effects of work-family enrichment.

This study explored not only cross-sectional moderating effects, but also longitudinal moderating effects of Confucian work values in relation to work-family conflict and enrichment. Cross-sectional moderating effects of Confucian work values have been significantly demonstrated in previous organisational studies (e.g. Siu et al., 2003), but longitudinal moderating effects of these values need to be investigated in order to systematically understand their protective effects in the workplace (Siu, 2003; Siu et al., 2005), although relevant studies are rare. Therefore, this study investigated both cross-sectional and longitudinal moderating effects of Confucian work values in relationships between predictor variables, and work-to-family interference and facilitation.

3.5.4 Hypotheses for Moderating Effects of Confucian Work Values

Cross-sectional hypotheses

H71: The positive relationship between work demands and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work demands on work-to-family interference at (a) Time 1, and (b) Time 2.

H72: The positive relationship between work-role conflict and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work-role conflict on work-to-family interference at (a) Time 1, and (b) Time 2

H73: The positive relationship between organisational constraints and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of organisational constraints on work-to-family interference at (a) Time 1, and (b) Time 2.

H74: The positive relationship between supervisor support and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of supervisor support on work-to-family facilitation at (a) Time 1, and (b) Time 2.

H75: The positive relationship between perceived organisational support and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of perceived organisational support on work-to-family facilitation at (a) Time 1, and (b) Time 2.

H76: The positive relationship between work control and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work control on work-to-family facilitation at (a) Time 1, and (b) Time 2.

Longitudinal hypotheses

H77: The positive relationship between work demands at Time 1 and work-to-family interference at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will reduce the effects of work demands at Time 1 on work-to-family interference at Time 2.

H78: The positive relationship between work-role conflict at Time 1 and work-to-family interference at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will reduce the effects of work-role conflict at Time 1 on work-to-family interference at Time 2.

H79: The positive relationship between organisational constraints at Time 1 and work-to-family interference at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will reduce the effects of organisational constraints at Time 1 on work-to-family interference at Time 2.

H80: The positive relationship between supervisor support at Time 1 and work-to-family facilitation at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will increase the effects of supervisor support at Time 1 on work-to-family facilitation at Time 2.

H81: The positive relationship between perceived organisational support at Time 1 and work-to-family facilitation at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will increase the effects of perceived

organisational support at Time 1 on work-to-family facilitation at Time 2.

H82: The positive relationship between work control at Time 1 and work-to-family facilitation at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will increase the effects of work control at Time 1 on work-to-family facilitation at Time 2.

3.6 Chapter Summary

This chapter described the literature relating to the mediating effects of work-family conflict and enrichment in relationships between predictor and criterion variables. Previous findings associated with the moderating effects of optimism and Confucian work values in relationships between predictor variables and work-family conflict and enrichment were also discussed. Supported by the above literature, the present study suggested longitudinal hypotheses for the mediating effects of work-family conflict and enrichment. Hypotheses for cross-sectional and longitudinal moderating effects of optimism and Confucian work values were also presented. The next chapter (Chapter 4) describes the methodology of this study.

CHAPTER 4

METHOD

This chapter outlines the methodology adopted in the present study, and describes: (a) the research design, (b) participants and procedure, (c) research instruments, (d) data analysis, and (e) ethical approval.

4.1 Overview of Research Design

In order to investigate causal relationships between variables, a longitudinal research design was adopted. As described in Chapter 1, the time lag of ten months enabled me to explore potential effects on work-family conflict and enrichment over time, and also allowed a sufficient fluctuation, which in turn enabled an examination of changes in variables within that time period (Lu, 2011). I collected the data at Time 1 from October 2009 to February 2010. I collected the data at Time 2 ten months after the data collection at Time 1, from August 2010 to December 2010.

4.2 Participants and Procedure

For the distribution of questionnaires to participants, five universities (City University of Hong Kong, Chinese University of Hong Kong, Hong Kong Baptist University, Hong Kong Shue Yan University, and the University of Hong Kong) were approached because they offered part-time psychology programmes in Hong Kong. Three of those universities (City University of Hong Kong, Hong Kong Baptist University, and Hong Kong Shue Yan University) gave approval to conduct the data collection.

Full-time employees enrolled in part-time diploma, undergraduate or postgraduate psychology programmes in different universities in Hong Kong were invited to participate in the two rounds of data collection. These students were

full-time employees from different ranks, occupations, and industries, yielding a heterogeneous sample of participants. Furthermore, immediate supervisors of the participants were also invited to rate their subordinates' work performance and counterproductive workplace behaviours in the Time 2 survey.

Seven hundred and fifty questionnaires were distributed, and a total of 530 completed questionnaires were returned, making a response rate of 70.7%. Twelve cases were deleted because they did not answer more than one set of items in the questionnaire. After deleting the above cases, 518 questionnaires remained, making a response rate of 69.1% at Time 1.

Five hundred and eighteen questionnaires were distributed to the participants and their immediate work supervisors, and a total of 220 completed questionnaires from the participants, as well as 220 completed questionnaires from their immediate work supervisors were returned, making a response rate of 42.5% for each group. Five cases were deleted because they did not answer more than one set of items in the questionnaire. After deleting the above cases, 215 questionnaires from the participants, and the same number of questionnaires from their immediate work supervisors remained, making a response rate of 41.5% for each group at Time 2.

Table 4.1 presents demographic information on participants. For the Time 1 survey, 313 females comprised 60.4% of the sample, and the mean age of participants was 31.86 years (SD = 8.87). In terms of marital status, 39.7% of the respondents were married or cohabiting, and 60.3 % of the respondents were single or separated. The mean working years in their current organization and job were 4.66 years (SD = 5.30) and 7.2 years (SD = 7.34) respectively.

Table 4.1 Demographic information

	Time 1 (N = 518)		Time 2 (N = 215)	
Demographic Characteristic	**Number**	**Percentage (%)**	**Number**	**Percentage (%)**
Gender				
- Male	205	39.6	86	40
- Female	313	60.4	129	60
Marital Status				
- Married/Cohabiting	206	39.7	89	41.4
- Single/Separated	312	60.3	126	58.6
Educational Level				
- Primary Education	41	7.9	13	6.1
- Secondary Education	99	19.1	37	17.2
- Diploma/Associate Degree	87	16.8	33	15.3
- Undergraduate Degree	172	33.2	78	36.3
- Postgraduate Degree	115	22.2	54	25.1
- Doctoral Degree	4	0.8	0	0
Job Position				
- Non Managerial Staff	248	48.1	98	45.6
- Frontline Supervisor	134	25.9	55	25.5
- Middle Manager	113	21.8	53	24.7
- Senior Manager	23	4.2	9	4.2
Age	Mean: 31.86 years SD: 8.87 Range: 18 - 60		Mean: 33.42 years SD: 11.69 Range: 21 - 60	
Tenure (Organization)	Mean: 4.66 years SD: 5.30 Range: 1 - 35		Mean: 4.94years SD: 5.07 Range: 1 - 31	
Tenure (Job)	Mean: 7.2 years SD: 7.34 Range: 1 - 40		Mean: 7.03 years SD: 6.84 Range: 1 - 37	

For the Time 2 survey, 129 females comprised 60% of the sample, and the mean age of participants was 33.42 years (*SD* = 11.69). This ratio was similar to the Time 1 sample. In terms of marital status, 41.4% of the respondents were married or cohabiting, and 58.6% of the respondents were single or separated. The mean working years in their current organization and job were 4.94 years (*SD* = 5.70) and 7.03 years (*SD* = 6.84) respectively. When the participants' immediate work supervisors completed questionnaires in the Time 2 survey, they were only required to rate their subordinates' performance, and not asked to provide demographic information. Therefore, Table 4.1 does not describe the demographic characteristics of those immediate work supervisors.

A series of t-tests and crosstab analyses using Pearson Chi-Square (χ^2) was conducted to investigate demographic difference between the respondents who participated only at Time 1 (N = 303), and those who participated at both Time 1 and Time 2 (N = 215). Table 4.2 shows that there was no significant difference in the means of age, and tenure in the current organization and job between two groups of participants.

Table 4.2 Results of t-tests between two groups of participants

Variable	**Means of Group 1 (N = 303)**	**Means of Group 2 (N = 215)**	**Difference (Group 1, Group 2)**	**t-values**
Age	33.57	33.42	.15	-.06
Tenure (Organization)	4.77	4.94	.-17	.30
Tenure (Job)	7.41	7.03	.38	-.64

Note. [1] Male = 0, Female = 1; [2] Married/Cohabiting = 0, Unmarried/Separated = 1, MARITAL = Marital Status

** p < .05, ** P < .01, *** P < .001*

Table 4.3 indicates that the Pearson Chi-Square values of other demographic variables, including gender, marital status, educational level, and job position, were not significant. These results indicate that there was no significant difference on demographic variables between the two groups of participants.

Table 4.3 Crosstab analyses between two groups of participants

Variable	**Participants in Group 1 (N = 303)[1]**	**Participants in Group 2 (N = 215)[2]**	**Total (N = 518)**
Gender			
- Male	119	86	205
- Female	184	129	313
Pearson Chi-Square: 3.02; df: 2; p = .22			
Marital Status			
- Married/Cohabiting	117	89	206
- Single/Separated	186	126	312
Pearson Chi-Square: 4.46; df: 2; p = .35			
Educational Level			
- Primary Education	28	13	41
- Secondary Education	62	37	99
- Diploma/Associate Degree	54	33	87
- Undergraduate Degree	94	78	172
- Postgraduate Degree	61	54	115
- Doctoral Degree	4	0	4
Pearson Chi-Square: 3.84; df: 5; p = .57			
Job Position			
- Non Managerial Staff	150	98	248
- Frontline Supervisor	79	55	134
- Middle Manager	60	53	113
- Senior Manager	14	9	23
Pearson Chi-Square: 1.64; df: 4; p = .80			

Note. [1] Participants participated only in the Time 1; [2] Participants participated at both Time 1 and Time 2

Before conducting the data collection, ethical approval for the present study was granted by The Research and Ethics Committee of the School of Psychology at the University of Waikato. A questionnaire (see Appendix A) with a cover letter written by the researcher was distributed to the participants directly when they were attending lectures. This letter explained the purpose and procedure of the survey, method of contact with the researcher, and confidentiality of the data. When the participants completed the questionnaire, they were asked to return it to the researcher before finishing the lecture. In addition, they were also required to provide their email address, so that the Time 2 questionnaire could be sent to them directly, and asked to complete it within four weeks. All questionnaires collected at Time 1 were also numbered with serial numbers, and these numbers and respondents' email address were adopted to match Time 1 and Time 2 questionnaires. The participants who had returned their questionnaires at Time 1 were invited to participate at Time 2 ten months later.

Participants' immediate work supervisors were also invited at Time 2 to complete a separate questionnaire (see Appendix B) which focused on work performance and counterproductive workplace behaviours among their subordinates. Supervisor ratings provide convergent validity of self-rated measures of work performance and counterproductive workplace behaviours (Spector, Dwyer & Jex, 1988). These two questionnaires, with a cover letter written by the researcher, were delivered to the participants through email, and the participants were asked to send the second questionnaire to their supervisors. Both participants and their immediate work supervisors were asked to complete the questionnaires, and return them to the researcher through email or postal address within four weeks. In order to enhance the response rate at Time 2,

the researcher also sent a reminder notice to the participants three weeks after the distribution of questionnaires.

4.3 Measures

All instruments were written in English except the measure of Confucian work values. Some instruments were translated into the Chinese version by previous researchers, which in turn could be used in the present study. When the instruments were only written in English, they were translated into the Chinese version through the back-translation procedure.

This procedure included several steps shown as follows.

1. A local translator translated the English version of the instruments into the Chinese version.
2. A second local translator back-translated the instruments into English.
3. A native speaker in English conducted a comparison of content between the two English versions in order to assess whether or not the translated Chinese version was equivalent to the original English version.
4. If any differences were found between the two English versions, the first translator revised the Chinese version, and the other steps of the back-translation procedure were repeated.
5. The whole procedure was completed when the Chinese version of instruments was equivalent to the original English version, judged by the native English speaker in step 3.

Full versions of questionnaires are presented in Appendix A and Appendix B. Table 4.4 presents a summary of measures that were used in the present study. This table includes the total number of items, sources, and Cronbach's alpha reported by the authors. However, the alpha coefficient for the family control scale was not available because the author did not provide this information in his

Table 4.4 Information and source of measures

Variables	Source of Measures	No. of Item	Alpha
1.Quantitative Workload*	Siu, Spector, Cooper & Lu (2005)	5	.92
2.Organizational Constraints*	Siu, Spector, Cooper & Lu (2005)	11	n.a.
3.Work-Role Conflict	Stepanski (2002)	8	.84
4.Family Workload	Aryee, Luk, Leung, & Lo (1999)	3	.85
5.Family-Role Conflict	Stepanski (2002)	7	.76
6.Supervisor Support	Clark (2001)	3	.86
7.Perceived Organisational Support	Allen (2001)	14	.91
8.Family Support	Georgas, Christakopoulou, Poortinga, Angleitner, Goodwin & Charalambous (1997)	6	n.a.
9.Work Control*	Siu, Spector, Cooper & Lu (2005)	3	.75
10.Family Control	Pearlin & Schooler (1978)	7	n.a.
11.Work-Family Conflict	Frone & Yardley (1996)	10	.79[1]; .87[2]
12.Work-Family Enrichment	Carlson, Kacmar, Wayne, & Grzywacz (2006)	18	.92
13.Family Satisfaction*	Lu et al. (2009)	3	.97
14.Work Performance (Self-rated)	Donald, Taylor, Johnson, Cooper, Cartwright & Robertson (2005)	1	n.a.
15.Work Performance (Supervisor-rated)	Farh & Cheng (1997)	4	.89
16.Organizational Citizenship Behaviours	Kelloway, Loughlin, Barling & Nault (2002)	9	n.a.
17.Physical Symptoms*	Siu (2002)	6	n.a.
18.Psychological Strain*	Lai & Yue (2000)	12	.85
19.Counterproductive Workplace Behaviours	Kelloway, Loughlin, Barling & Nault (2002)	10	n.a.
20.Optimism*	Lai (2003)	6	.74
21.Confucian Work Values*	Lu, Kao, Chow & Siu (2001)	16	.85

**Chinese Version of the Instrument.*

[1] Work-to-family Interference; [2] Family-to-work Interference

research article. The self-rated work performance scale was a single-item instrument, and therefore an alpha coefficient was not relevant. The alpha coefficient was also not applicable to the "Organisational Constraints", "Family Support", "Physical Symptoms", "Organisational Citizenship Behaviours", and "Counterproductive Workplace Behaviours" measures, because each item represented distinct elements or behaviours. Cronbach's alphas for the present study are reported after presenting the results of confirmatory factor analysis in Chapter 5.

4.3.1 Work Demands

Two separate measures were used to measure levels of work demands. Firstly, participants indicated the total number of actual work hours per week on average. Secondly, the Chinese version of the 5-item Quantitative Workload Inventory (Siu et al., 2005) was adopted to measure levels of perceived workload. Participants were asked to indicate the frequency of each item (e.g. "How often is there a great deal to be done"). Each item was rated on a 5-point scale ranging from 1 = "less than once per month or never" to 5 = "several times per day", and a total workload score was computed as the mean score across items. These two measures were treated as separate measures in further analyses.

4.3.2 Organizational Constraints

The Chinese version of the 11-item Organizational Constraints Scale (Siu et al., 2005) was adopted to measure perceived organizational constraints. Participants were required to indicate how often their performance was interrupted by those constraints (e.g. "incorrect instructions"). Each item was rated on a 5-point scale ranging from 1 = "less than once per month or never" to 5 = "several times per day", and a total organizational constraints score was computed as the mean score across items.

4.3.3 Work-Role Conflict

The 8-item work-role conflict scale (Stepanski, 2002) was used to measure perceived work-role conflict. The Chinese version of this scale was developed by the back-translation procedure described above, and the participants were asked to indicate the degree to which they agreed or disagreed with each item related to work-role conflict (e.g. "I receive incompatible requests from two or more people at work"). Each item was rated on a 7–point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", and a total work-role conflict score was computed as the mean score across items.

4.3.4 Family Demands

Three separate measures were used to assess levels of family demands. Firstly, participants indicated the total number of actual hours spent on family tasks per week on average. Secondly, participants also indicated the total number of dependents in their family. Finally, the 3-item scale developed by Aryee, Luk, Leung and Lo (1999) was used to measure perceived family workload. The Chinese version of this scale was formed by the back-translation procedure described above, and the participants were required to indicate the frequency of each item related to perceived family workload (e.g. "How often do you feel that you have too much family-related work to do"). Each item was rated on a 7-point scale ranging from 1 = "never" to 7 = "very often", and a total family workload score was computed as the mean score across items. These three measures were treated as separate measures in further analyses.

4.3.5 Family-Role Conflict

The 7-item family-role conflict scale (Stepanski, 2002) was used to measure perceived family-role conflict. The Chinese version of this scale was formed through the back-translation procedure described above, and participants indicated

the degree to which they agreed or disagreed with each item related to family-role conflict (e.g. “Outside of work, I deal with two or more groups who operate quite differently”). Each item was rated on a 7–point scale ranging from 1 = “strongly disagree” to 7 = “strongly agree”, and a total family-role conflict score was computed as the mean score across items.

4.3.6 Work Support

Two separate measures, including supervisor support and perceived organizational support, were adopted to measure levels of work support in the present study. Firstly, the 3-item scale developed by Clark (2001) was used to measure perceived *supervisor* support. The Chinese version of this scale was formed by the back-translation procedure described above, and the participants indicated the degree to which they agreed or disagreed with each item related to perceived family support (e.g. “My supervisor understands my family demands”) provided by their work supervisor. Each item was rated on a 7-point scale ranging from 1 = “strongly disagree” to 7 = “strongly agree”, and a total supervisor support score was computed as the mean score across items.

Secondly, the 14-item scale developed by Allen (2001) was used to measure perceived organisational support. The Chinese version of this scale was formed by the back-translation procedure described above, and participants indicated the degree to which they agreed or disagreed with each item associated with perceived family support from the organization (e.g. “Employees are given ample opportunity to perform both their job and their personal responsibilities well”). Each item was rated on a 7-point scale ranging from 1 = “strongly disagree” to 7 = “strongly agree”, and a total organisational support score was computed as the mean score across the fourteen items. These three measures were treated as separate measures in further analyses.

4.3.7 Work Control

The Chinese version of the 3-item Job Autonomy Scale (Siu et al., 2005) was adopted to measure perceived work control. Participants indicated the degree to which they agreed or disagreed with each item related to work control (e.g. "I decide on my own how to go about doing the work"). Each item was rated on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", and a total work control score was computed as the mean score across items.

4.3.8 Family Support

The 6-item scale developed by Georgas, Christakopoulou, Poortinga, Angleitner, Goodwin and Charalambous (1997) was used to measure levels of domestic help from other people. Participants indicated the frequency of receiving domestic help from other people, including spouse, parents, siblings, other relatives (e.g. grandparents, aunts, uncles, or cousins), friends or neighbors, and someone participants hired and paid in the last three months. Each item was rated on a 5-point scale ranging from 1 = "never" to 5 = "daily", and a total family support score was computed as the mean score across items.

4.3.9 Family Control

The 7-item scale developed by Pearlin and Schooler (1978) was used in the present study. The Chinese version of this scale was developed by the back-translation procedure described above, and participants indicated the degree to which they agreed or disagreed with each item related to perceived family control (e.g. "I can do just about anything I really set my mind to in my family life"). Each item was rated on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", and a total family control score was computed as the mean score across items.

4.3.10 Work-Family Conflict

The 10-item scale developed by Frone and Yardley (1996) was used to assess levels of work-family conflict. This scale consists of two dimensions, including work-to-family interference (e.g. "The demands of my work interfere with my home and family life") and family-to-work interference (e.g. "The demands of my family or spouse/partner interfere with work-related activities"). The Chinese version of this scale was developed by the back-translation procedure described above, and participants indicated the degree to which they agreed or disagreed with each item related to both types of work-family interference. Each item was rated on a 7–point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", and total work-family conflict scores were computed as the mean score across items in the above dimensions. Furthermore, these two dimensions were separately analysed in the present study.

4.3.11 Work-Family Enrichment

The 18-item scale developed by Carlson, Kacmar, Wayne, and Grzywacz (2006) was used to measure levels of work-family enrichment. This scale consists of two dimensions, including work-to-family facilitation and family-to-work facilitation. However, this scale is different from the scale of work-family conflict mentioned above because it focuses on three components of each direction of facilitation: "development", "affect", and "capital". The Chinese version of this scale was developed by the back-translation procedure described above, and participants indicated the degree to which they agreed or disagreed with each item related to both directions of work-family enrichment. Each item was rated on a 7–point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", and total work-family enrichment scores in the above

components were separately computed as the mean score across items. These six components were also separately analysed in this study.

4.3.12 Family Satisfaction

The Chinese version of the 3-item family satisfaction scale (Lu, Kao, Cooper, Allen, Lapierre, O'Driscoll, Poelmans, Sanchez & Spector, 2009) was adopted to measure family satisfaction. Participants indicated the degree to which they agreed or disagreed with each item related to family satisfaction (e.g. "All in all, the family life I have is great"). Each item was rated on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", a total family satisfaction score was computed as the mean score across items.

4.3.13 Physical Symptoms

The Chinese version of the 6-item Physical Well-being scale from the Occupational Stress Indicator (Siu, 2002) was used to measure physical symptoms. Participants indicated whether or not they had experienced any of the physical symptoms (e.g. "Feeling unaccountably tired or exhausted") in the last three months. Each item was rated on a 7-point scale ranging from 1 = "never" to 7 = "very often", and a total physical symptoms score was computed as the mean score across items.

4.3.14 Psychological Strain

The Chinese version of the 12-item General Health Questionnaire (Lai & Yue, 2000) was used to measure psychological strain. Participants indicated whether they had experienced each symptom in the last month (e.g. "Lost much sleep over worry"). Each item was rated on a 7-point scale ranging from 1 = "less so than usual" to 7 = "much more than usual", and the psychological strain score was computed as the mean score across items.

4.3.15 Work Performance

Two separate measures were used in the present study. One item suggested by Donald, Taylor, Johnson, Cooper, Cartwright and Robertson (2005) was adopted to measure participants' self-rated work performance in both T1 and T2 surveys. They were asked to indicate "Over the last 3 months, roughly how productive have you felt in your job?". This item was rated on a 7-point scale ranging from 1 = "less than 50% productive", 2 = "50% – 59% productive", 3 = "60% - 69% productive", 4 = "70% - 79 productive", 5 = "80% - 89 productive", 6 = "90% - 99 productive", and 7 = "100% productive".

The 4-item scale developed by Farh and Cheng (1997) was used to measure supervisor-rated work performance in the Time 2 survey. The Chinese version of this scale was formed by the back-translation procedure described above, and immediate work supervisors of the participants were asked to rate the degree to which they agreed or disagreed with each item of work performance among their subordinates (e.g. "This subordinate makes an important contribution to the overall performance of our work unit"). Each item was rated on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", a total supervisor-rated work performance score was computed as the mean score across the four items.

4.3.16 Organisational Citizenship Behaviours

The 9-item organisational citizenship behaviours scale (Kelloway, Loughlin, Barling & Nault, 2002) was used to measure organisational citizenship behaviours. The Chinese version of this scale was formed by the back-translation procedure described above. Participants indicated how often they had engaged in each of the listed behaviours (e.g. "Volunteering to do things not formally required by the job"). Each item was rated on a 7-point scale ranging from 1 = "never" to 7 =

"very often". However, immediate supervisors of the participants were not required to rate this section for their subordinates, a total organisational citizenship behaviours score was computed as the mean score across related items. In order to enhance the response rate of immediate supervisors, the length of the questionnaire for those supervisors was limited. As suggested by previous studies (Lu et al, 2011, Siu 2003), the present study only invited supervisors to rate their subordinates' work performance and counterproductive workplace behaviours rather than organisational citizenship behaviours.

4.3.17 Counterproductive Workplace Behaviours

The 10-item counterproductive behaviours scale (Kelloway et al., 2002) was used to measure self-rated and supervisor-rated counterproductive workplace behaviours. The Chinese version of this scale was formed by the back-translation procedure described above, and participants indicated how often they had engaged in each of the listed behaviours (e.g. "Intentionally worked slowly"). Supervisors of the participants were also separately invited at Time 2 to rate the frequency of each behaviour performed by their subordinates. Each item was rated on a 7-point scale ranging from 1 = "never" to 7 = "very often", and total self-rated counterproductive workplace behaviours and supervisor-rated counterproductive workplace behaviours scores were separately computed as the mean score across items.

4.3.18 Optimism

The Chinese version of the 6-item revised Life Orientation Test (CRLOT) modified and validated by Lai (2003) was used to measure levels of optimism. This scale was developed by Scheier, Carver and Bridges (1994), but one problematic item ("If something can go wrong for me, it will") led to low internal consistency (Lai, Hamid & Cheng, 2000), and therefore this item was replaced by

a new item ("Looking into the future, I do not see any positive scenarios") (Lai, 2003). Participants indicated the degree to which they agreed or disagreed with each item (e.g. "I am always optimistic about my future"). Each item was rated on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree". However, three items were pessimistic sentences, including "I hardly ever expect things to go my way", and "I rarely count on good things happening to me", and "Looking into the future, I do not see any positive scenarios". They were reverse coded during the data analysis. A total optimism score was computed by the mean score across positive and reverse scored negative items.

4.3.19 Confucian Work Values

Lu, Kao, Chow and Siu's (2001) 16-item scale was used to measure work-related Confucian values. This scale is a short version of the Chinese Work Value Scale developed by Huang, Eveleth and Huo (1998), and consists of two main dimensions. As described in Chapter 3, the first dimension is the "CGF", a factor which includes "credentialism", "guanxi", and "functionalism", and the second dimension is the "LEACH" factor, which contains "long-term orientation", "endurance", "authoritarianism", "collectivism", and "hardworking". Participants indicated the degree to which they agreed or disagreed with each item related to work-related Confucian values (e.g. "I think being patient is a virtue"). Each item was rated on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree", and the total Confucian work values scores were separately computed as the mean score across items in the above dimensions. Furthermore, these two dimensions were separately analysed in the present study.

4.3.20 Demographic Information

Demographic information was collected, including age, gender, education (e.g. primary, secondary, diploma/degree), marital status, occupation, tenure for the current job, tenure for the current occupation, and job rank (worker, frontline supervisor, manager, senior manager).

4.4 Data Analysis Procedures

4.4.1 Data Preparation

Statistical Package for Social Science (SPSS, version 17) was used for data preparation. Firstly, scores on all negative worded items were reversed, and frequencies of all items were also examined in order to detect any errors of data entry and missing responses.

Secondly, potential multivariate outliers were checked. Multivariate outliers refer to extreme data points that may have a significant effect on indices of model fit, parameter estimates, and standard errors (West, Finch, & Curran, 1995). The Mahalanobis distance test (D^2) was adopted to assess multivariate outliers (Tabachnick & Fidell, 2007). Extreme outliers can be identified when D^2 is significant at the 1% level (Mullen, Milne, & Doney, 1995). In this study, the latter standard was used to indicate any multivariate outliers.

Thirdly, normality of all scores was assessed by the Kolmogorov-Smirnov skewness and kurtosis statistics. As Tabachnick and Fidell (2007) suggested, the distribution of scores is considered as normal when skewness and kurtosis statistics are within the range of plus and minus three. These statistics will be described in Chapter 5.

In the next stage, confirmatory factor analysis (CFA) was adopted to assess the latent factor structure of instruments, except measures of "Organizational Constraints", "Family Support", "Physical Symptoms", "Organizational

Citizenship Behaviours", and "Counterproductive Workplace Behaviours". These measures were formative measures (Edwards & Bagozzi, 2000). Items of these measures were causal indicators of the constructs, but they reflected distinct elements or behaviours, and also might not necessarily relate to other elements or behaviours in the same construct (Bollen & Lennox, 1991). Therefore, concepts of internal consistency or CFA are not applicable to those measures (Bollen & Lennox, 1991; Gravetter & Forzano, 2012). Self-rated work performance measure was also not included in the CFA because it was a single-item instrument. Results of the confirmatory factor analysis will be presented in Chapter 5.

After completing the confirmatory factor analysis, descriptive analysis was conducted for generating the frequency distributions of main variables. Reliability of measures was assessed by Cronbach's alpha.

4.4.2 Cross-Sectional Analysis

Correlational and hierarchical regression analyses (Cohen & Cohen, 1983) were conducted to respectively examine direct effects of predictors on criterion variables, and moderating effects between predictor and criterion variables. Correlational analyses were used to investigate relationships between predictor and criterion variables. These analyses were undertaken for both the cross-sectional and longitudinal data.

Hierarchical regression analyses were adopted to investigate potential moderating effects between predictor and criterion variables. Before conducting these analyses, all predictor and moderator variables were centred to resolve any potential problem of multicollinearity among the variables (Aiken & West, 1991). Three steps were conducted in the hierarchical regression analyses. Firstly, demographic variables were entered to control potential confounding effects. Secondly, predictor variables and potential moderators were entered into the

regression equation. In the third step, interaction terms formed by predictor and moderator variables were entered.

4.4.3 Longitudinal Analysis

Longitudinal analysis was used to assess the effects of predictor variables on criterion variables over the 10-month period. Potential longitudinal relationships between predictor, mediator and criterion variables were explored.

For examining longitudinal mediating and moderating effects, the autoregressive model recommended by Cole and Maxwell (2003) was adopted in the present study (see Figure 4.1). This model can allow the researcher to assess whether or not predictor variables at Time 1 can contribute significant effects on criterion variables at Time 2 over a 10-month time period. In order to avoid inflated causal path estimates, the effects of mediator and criterion variables at Time 1 were also controlled (Cole & Maxwell, 2003)

Figure 4.1 shows that effects of predictor variables from work and family domains at Time 1 on mediator variables (work-family conflict and enrichment) at Time 2 were assessed by controlling those mediator variables at Time 1, and effects of mediator variables at Time 2 on criterion variables from personal, family, and work domains at Time 2 were also examined by controlling those criterion variables at Time 1 (Cole & Maxwell, 2003). In addition, effects of predictor variables from work and family domains at Time 1 on criterion variables at Time 2 were examined. Structural equation modeling (SEM) was conducted using AMOS 18. Compared with multiple regression analyses, this technique is considered more rigorous and more flexible to examine mediating effects, and can test complex path models (Kelloway, 1998). Common fit indexes, including the Chi-square (χ^2), the normed Chi-square (χ^2/df), the standardized root mean square residual (SRMR), the root mean square error of approximation (RMSEA),

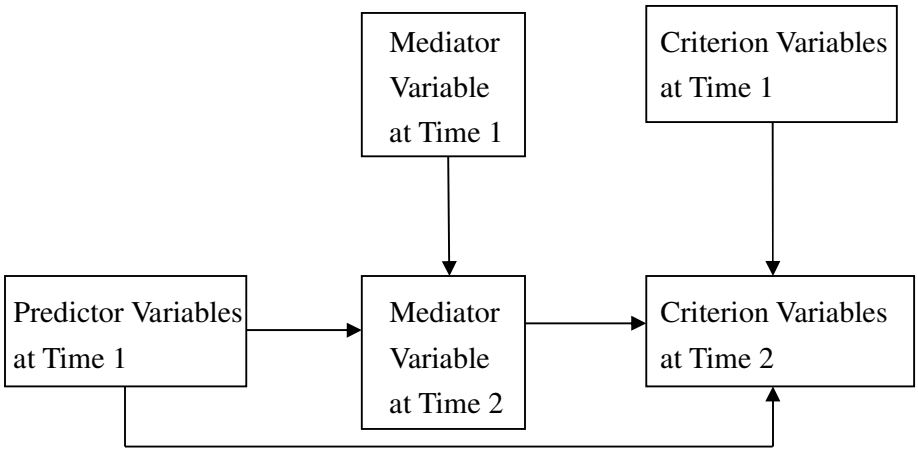


Figure 4.1 Longitudinal mediation model in the present research

the goodness-of-fit index (GFI) and the Akaike information criterion (AIC) were used to examine the goodness of fit of the proposed model.

Concerning longitudinal moderating effects, Figure 4.2 shows that criterion variables (work-family conflict and enrichment) at Time 2 were regressed on predictor variables in the work and family domains at Time 1, and moderator variables (optimism and Confucian work values) at Time 2, together with those criterion variables at Time 1 (Cole & Maxwell, 2003). Hierarchical regression analyses were employed to examine the longitudinal moderating effects. Four steps were undertaken in the regression equation. Firstly, demographic variables at Time 1 were entered to control potential confounding effects. Secondly, the criterion variable at Time 1 was entered to control initial levels of that variable. In the next step, predictor variables at Time 1 and moderator variables at Time 2 were entered into the equation. Finally, the interaction terms between predictor and moderator variables were entered. All predictor and moderator variables were centred to address the problem of multicollinearity (Aiken & West, 1991).

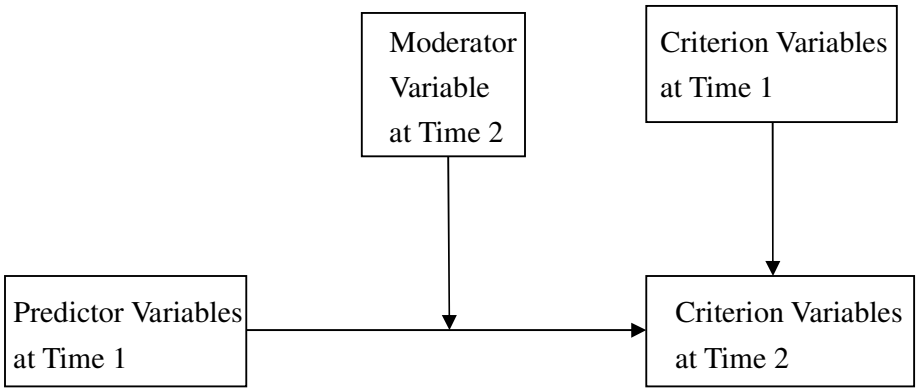


Figure 4.2 Longitudinal moderation model in the present research

4.5 Ethical Considerations

The Research and Ethics Committee of the School of Psychology at the University of Waikato granted ethical approval for the present study, and permission was given by the leaders of psychology programmes at the universities sampled before undertaking any research activities (e.g. distribution of questionnaires). Participation in the present study was voluntary. Participants were informed that they could make the decision on whether or not to answer and return the questionnaires. They were instructed to complete and return the questionnaire during the period of rest time in their lesson. Non-participants were asked to leave the classroom for having a rest, and come back to the classroom after the data collection. Before completing the questionnaire, participants were required to read the letter written by the researcher. This letter explained the purpose and procedure of the present study, and to provide the contact address of the researcher if the participants had any questions regarding the present study. In addition, participants were informed that returning the questionnaire would be considered as a sign of consent to participate in the present study. All information provided by the participants was confidential.

CHAPTER 5

PSYCHOMETRIC ANALYSIS

5.1 Analysis of Missing Values and Multivariate Outliers

This chapter reports the psychometric analysis of the research instruments used in the present study. The following issues are described: (a) missing values and multivariate outliers, (b) confirmatory factor analysis of research instruments, and (c) reliability, skewness and kurtosis statistics. In order to enhance levels of accuracy among data collected in the Time 1 and Time 2 surveys, analysis of missing values and multivariate outliers was conducted using SPSS version 17 before starting further analyses.

The Mahalanobis distance test (D^2) was adopted to assess multivariate outliers. Results indicated that nine cases at Time 1 and seven cases at Time 2 were identified as multivariate outliers, and therefore these nine cases at Time 1 and seven cases at Time 2 were deleted before starting further analyses. 509 cases at Time 1 and 208 cases at Time 2 were retained.

5.2 Confirmatory Factor Analysis of Research Instruments

Using AMOS 18, confirmatory factor analysis (CFA) was conducted to assess the factor structure of the research instruments. This analysis aimed to examine the model fit and the distinctiveness of those instruments. Multiple fit indices, including the model chi-square (χ^2), the normed chi square value (ratio of chi square to df; $\chi 2$/df), the standardised root mean square residual (SRMR), the root-mean-square error of approximation (RMSEA) with 90% confidence interval, the goodness of fit index (GFI), and the Akaike information criterion (AIC) were examined to assess goodness of fit.

Parameter estimates, including standardised factor loadings and factor correlations, were examined in order to assess model fit of the instruments. The criterion for standardised factor loadings was set at >.30, as recommended by Brown (2006). Correlations between factors were used to assess the discriminant validity of the instruments. Factor correlations of .80 or above are interpreted as illustrating poor discriminant validity (Brown, 2006; Kline, 2005).

As mentioned in Chapter 4, organizational constraints, family support, physical symptoms, self-rated work performance, organizational citizenship behaviours, and counterproductive workplace behaviours measures were not included in the CFA and reliability analysis, because items in these measures reflected distinct elements or behaviours, and therefore concepts of internal consistency or facture structure are not applicable (Bollen & Lennox, 1991).

5.2.1 Predictors of Work-to-Family Interference

Quantitative workload, organizational constraints, work-role conflict and the total working hours per week were hypothesised to be as predictors of work-to-family interference. However, the total working hours per week measure was not included in the CFA because this was a single item measure. Separate confirmatory factor analyses were conducted to assess the factor structure of each instrument. Combined confirmatory factor analyses were conducted to assess whether or not the predictors of work-to-family interference were distinct variables.

Quantitative Workload

Table 5.1 indicates acceptable fit statistics at Time 1, but unacceptable fit statistics for the quantitative workload measure (Model 1) at Time 2. Therefore, the item with the lowest factor loading (.65 at Time 2) was deleted, and confirmatory factor analysis was conducted on the revised instrument. The item

deleted was "How often do you have to do more work than you can do well" (Item 5). Results in Table 5.1 show acceptable fit statistics for the revised instrument (Model 2) at Time 1 and Time 2, and the standardised factor loadings for remaining items ranged from .77 to .82 at Time 1, and .76 to .88 at Time 2. The 4-item measure of quantitative workload was retained for further analyses.

Table 5.1 Confirmatory factor analysis of quantitative workload

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	17.28	5	3.46	.99	.02	.07	37.29
Model 2 (Item 5 Deleted)	1.03	2	.52	.99	.01	.00	17.03
Time 2							
Model 1	32.39	5	6.49	.95	.04	.16	52.39
Model 2 (Item 5 Deleted)	3.70	2	1.85	.99	.01	.06	19.70

Standardised Factor Loadings for Model 2

	Time 1	Time 2
Item 1	.78	.87
Item 2	.77	.88
Item 3	.82	.82
Item 4	.82	.76

Work-Role Conflict

Table 5.2 shows unacceptable fit statistics for the work-role conflict measure (Model 1) at Time 1. Accordingly, the item with the lowest factor loading (.38 at Time 1) was deleted, and confirmatory factor analysis of the revised instrument was executed. The item deleted was "I work with two or more groups who operate quite differently" (Item 4). Results in Table 5.2 indicate acceptable fit statistics for the revised instrument (Model 2) at Time 1 and Time 2, and the standardised factor loadings of remaining items ranged from .42 to .76 at Time 1,

and .43 to .80 at Time 2. Hence, the 7-item measure of work-role conflict was retained for further analyses.

Table 5.2 Confirmatory factor analysis of work-role conflict

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	110.98	20	5.55	.95	.05	.09	142.98
Model 2 (Item 4 Deleted)	55.34	14	3.95	.97	.04	.07	83.34
Time 2							
Model 1	61.93	20	3.10	.93	.06	.10	93.93
Model 2 (Item 4 Deleted)	44.57	14	3.18	.94	.05	.10	72.57
Standardised Factor Loadings for Model 2							
	Time 1	Time 2					
Item 1	.42	.54					
Item 2	.55	.59					
Item 3	.50	.43					
Item 5	.69	.60					
Item 6	.69	.69					
Item 7	.76	.80					
Item 8	.61	.64					

Combined Confirmatory Factor Analyses of Predictors of Work-to-Family Interference

In order to assess the distinction between predictors of work-to-family interference, combined confirmatory factor analyses were conducted on one- and two-factor models. The one-factor model combined all dimensions into a single factor, and the two-factor model consisted of quantitative workload as the first factor and work-role conflict as the second factor. Results in Table 5.3 show that the one-factor model yielded unacceptable fit indices at Time 1 and Time 2, which suggests that the one-factor model did not fit the current data.

Table 5.3 Combined confirmatory factor analyses of predictors of work-to-family interference

Model	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	778.18	44	17.69	.68	.16	.18	822.18
2 Factor	89.37	43	2.08	.97	.04	.05	135.37
Factor Correlation between "Quantitative Workload" and "Work-Role Conflict": .22							
Time 2							
1 Factor	406.74	44	9.24	.65	.20	.20	450.74
2 Factor	74.15	43	1.72	.94	.05	.06	120.15
Factor Correlation between "Quantitative Workload" and "Work-Role Conflict": .22							

Table 5.3 indicates that the two-factor model yielded acceptable fit indices. The Akaike information criterion (AIC) values for the two-factor model were smaller than for the one-factor model, and factor correlations between two factors were considerably lower than .80 at Time 1 and Time 2. The two-factor model of predictors of work-to-family interference, including quantitative workload and work-role conflict as distinct variables, was selected for further analyses.

5.2.2 Predictors of Family-to-Work Interference

Family workload, family-role conflict, the total working hours in family per week, and the total number of dependents were predictors of family-to-work conflict. However, the total working hours in family per week and the total number of dependents measures were not included in the CFA because these were each single item measures. Separate confirmatory factor analyses were first conducted to assess the factor structure of family workload and family-role conflict. Secondly, combined confirmatory factor analyses were conducted to assess whether or not predictors of family-to-work conflict were distinct variables.

Family Workload

Table 5.4 shows acceptable fit statistics for the family workload measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .75 to .84 at Time 1, and .76 to .78 at Time 2. The 3-item measure of family workload was therefore retained for further analyses.

Table 5.4 Confirmatory factor analysis of family workload

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	1.36	1	1.36	1.00	.01	.03	11.36
Time 2							
Model 1	.80	1	.80	1.00	.01	.00	10.80
Standardised Factor Loadings							
	Time 1	Time 2					
Item 1	.77	.76					
Item 2	.75	.77					
Item 3	.84	.78					

Family-Role Conflict

Table 5.5 shows that the family-role conflict measure had unacceptable fit statistics (Model 1) at Time 1 and Time 2. The item with the lowest factor loadings (.48 at Time 1; .50 at Time 2) was deleted, and confirmatory factor analysis of the revised instrument was conducted. The item deleted was "Outside of work, I deal with two or more groups who operate quite differently" (Item 3). The results still showed unacceptable fit statistics for the revised instrument (Model 2) at Time 1. Therefore, another item with the lowest factor loading (. 52 at Time 1; .50 at Time 2) was deleted, and confirmatory factor analysis was conducted again. The additional item deleted was "At home, I have things to do without the time to complete them" (Item 2). After deleting two items, the results indicated acceptable fit statistics for the revised instrument

Table 5.5 Confirmatory factor analysis of family-role conflict

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	80.67	14	5.76	.96	.04	.09	108.67
Model 2 (Item 3 Deleted)	65.83	9	7.31	.96	.05	.11	89.83
Model 3 (Item 2 and 3 Deleted)	9.90	5	1.98	.99	.02	.04	29.90
Time 2							
Model 1	46.82	14	3.34	.94	.05	.10	74.92
Model 2 (Item 3 Deleted)	14.54	9	1.62	.98	.03	.06	38.54
Model 3 (Item 2 and 3 Deleted)	4.76	5	.95	.99	.02	.00	24.76

Standardised Factor Loadings for Model 3

	Time 1	Time 2
Item 1	.53	.61
Item 4	.78	.71
Item 5	.71	.79
Item 6	.71	.70
Item 7	.68	.71

(Model 3) at Time 1 and Time 2. The standardised factor loadings for remaining items ranged from .53 to .78 at Time 1, and .61 to .79 at Time 2. Hence, the 5-item measure was retained for further analyses.

Combined Confirmatory Factor Analyses of Predictors of Family-to-Work Interference

To examine the distinction between predictors of family-to-work interference, combined confirmatory factor analyses of one- and two-factor models were implemented. The one-factor model combined both dimensions into a single factor, and the two-factor model consisted of family workload as the first factor and family-role conflict as the second factor.

Table 5.6 shows that the one-factor model provided unacceptable fit indices, but the two-factor model yielded acceptable fit indices at Time 1 and Time 2. The AIC values for the two-factor model were smaller than for the one-factor model. Although factor correlations between the two factors were quite high at Time 1 (.69) and Time 2 (.68), they were still lower than .80. The two-factor model of predictors of family-to-work interference, including family workload and family-role conflict as distinct variables, was selected for further analyses.

Table 5.6 Combined confirmatory factor analyses of predictors of family-to-work interference

Model	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	267.48	20	13.37	.86	.07	.16	299.48
2 Factor	74.88	19	3.94	.96	.04	.07	108.88
Factor Correlation between Family Workload and Family-Role Conflict: .69							
Time 2							
1 Factor	97.05	20	4.85	.88	.07	.14	129.05
2 Factor	17.63	19	.93	.98	.02	.00	51.63
Factor Correlation between Family Workload and Family-Role Conflict: .68							

5.2.3 Predictors of Work-to-Family Facilitation

Supervisor support, perceived organisational support and work control were predictors of work-to-family facilitation. Separate confirmatory factor analyses were first conducted to assess the factor structure of each instrument. Secondly, combined confirmatory factor analyses were conducted to assess whether or not predictors of work-to-family facilitation were distinct variables.

Supervisor Support

Table 5.7 shows acceptable fit statistics for the supervisor support measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items

ranged from .78 to .88 at Time 1, and .70 to .91 at Time 2. The 3-item measure of supervisor support was therefore retained for further analyses.

Table 5.7 Confirmatory factor analysis of supervisor support

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	4.11	1	4.11	1.00	.01	.08	14.11
Time 2							
Model 1	.11	1	.11	1.00	.00	.00	10.11
Standardised Factor Loadings							
	Time 1		Time 2				
Item 1	.78		.70				
Item 2	.88		.80				
Item 3	.82		.91				

Perceived Organisational Support

Table 5.8 shows unacceptable fit statistics for the perceived organizational support measure (Model 1) at Time 1 and Time 2. Factor loadings of four items were lower than .30 at Time 1 or Time 2. Therefore, these items were deleted in sequence, and confirmatory factor analysis was conducted after each deletion. Th deleted items were "Expressing involvement and interest in nonwork matters is viewed as healthy" (Item 5, factor loadings: .05 at Time 1; .06 at Time 2), "Offering employees flexibility in completing their work is viewed as a strategic way of doing business" (Item 13, factor loadings .12 at Time 1; .06 at Time 2), "Employees are given ample opportunity to perform both their job and their personal responsibilities well" (Item 12, factor loadings: .13 at Time 1; .09 at Time 2) and "It is best to keep family matters separate from work" (Item 3, factor loadings: 27 at Time 1; .22 at Time 2). After deleting these items, the results still showed unacceptable fit statistics for the revised instrument (Model 2) at Time 2.

Table 5.8 Confirmatory factor analysis of perceived organisational support

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	430.83	77	5.60	.89	.07	.10	486.83
Model 2 (Item 3, 5, 12, and 13 Deleted)	170.00	35	4.86	.94	.05	.09	210.00
Model 3 (Item 2, 3, 5, 12, and 13 Deleted)	104.40	27	3.87	.96	.04	.07	140.40
Time 2							
Model 1	257.91	77	3.35	.85	.08	.10	313.91
Model 2 (Item 3, 5, 12, and 13 Deleted)	133.21	35	3.81	.88	.07	.11	173.21
Model 3 (Item 2, 3, 5, 12, and 13 Deleted)	91.85	27	3.40	.91	.05	.10	127.85

Standardised Factor Loadings for Model 3		
	Time 1	Time 2
Item 1	.44	.45
Item 4	.50	.49
Item 6	.57	.44
Item 7	.70	.66
Item 8	.58	.62
Item 9	.64	.64
Item 10	.75	.70
Item 11	.74	.77
Item 14	.53	.47

Another item with the lowest factor loading (.35 at Time 1; .37 at Time 2) was deleted, and revised confirmatory factor analysis was conducted. This item was "Long hours inside the office are the way to achieving advancement" (Item 2). Table 5.8 shows acceptable fit statistics for the revised instrument (Model 3) at Time 1 and Time 2. The standardised factor loadings for the remaining items

ranged from .44 to .75 at Time 1, and .45 to .77 at Time 2. The 9-item measure of perceived organisational support was retained for further analyses.

Work Control

Table 5.9 shows acceptable fit statistics for the work control measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .77 to .85 at Time 1, and .78 to .83 at Time 2. The 3-item measure of work control was therefore retained for further analyses.

Table 5.9 Confirmatory factor analysis of work control

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	.32	1	.32	1.00	.00	.00	10.32
Time 2							
Model 1	1.13	1	1.13	1.00	.01	.03	11.13
Standardised Factor Loadings							
	Time 1	Time 2					
Item 1	.80	.78					
Item 2	.85	.83					
Item 3	.77	.79					

Combined Confirmatory Factor Analyses of Predictors of Work-to-Family Facilitation

To examine the distinction between predictors of work-to-family facilitation, confirmatory factor analyses on one- and three-factor models were undertaken. The one-factor model combined all dimensions into a single factor, and the three-factor model consisted of supervisor support as the first factor, perceived organizational support as the second factor, and work control as the third factor.

Table 5.10 indicates that the one-factor model yielded unacceptable fit indices, but the three-factor model provided acceptable fit indices at Time 1 and Time 2. The AIC values for the three-factor model were considerably smaller

Table 5.10 Combined confirmatory factor analyses of predictors of work-to-family facilitation

Model	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	1535.4	90	17.06	69	.15	18	1595.40
3 Factor	219.33	87	2.52	.95	.05	.06	285.33
Factor Correlation:							
Supervisor Support and Perceived Organizational Support: .24							
Supervisor Support and Work Control: .30							
Perceived Organizational Support and Work Control: .19							
Time 2							
1 Factor	734.31	90	8.16	.65	.16	.19	794.31
3 Factor	219.93	87	2.53	.91	.05	.08	285.93
Factor Correlation:							
Supervisor Support and Perceived Organizational Support: .26							
Supervisor Support and Work Control: .38							
Perceived Organizational Support and Work Control: .16							

than for the one-factor model. Factor correlations between the three factors were much lower than .80 at Time 1 and Time 2. The three-factor model of predictors for work-to-family facilitation, including supervisor support, perceived organisational support and work control as distinct variables, was selected for further analyses.

5.2.4 Predictors of Family-to-Work Facilitation

Family support and family control were predictors of family-to-work facilitation. As mentioned earlier (page 76), family support was not included in the CFA, and therefore only a one-factor model was tested in the CFA of predictors of family-to-work facilitation.

Family Control

Table 5.11 shows unacceptable fit statistics for the family control measure (Model 1) at Time 1. The item with the lowest factor loading (.07 at Time 1)

Table 5.11 Confirmatory factor analysis of family control

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	95.98	14	6.86	.95	.06	.11	123.99
Model 2 (Item 6 Deleted)	36.78	9	4.09	.98	.03	.08	60.78
Time 2							
Model 1	40.18	14	2.87	.95	.05	.10	74.82
Model 2 (Item 6 Deleted)	28.38	9	4.09	.98	.03	.08	61.62

Standardised Factor Loadings for Model 2

	Time 1	Time 2
Item 1	.74	.62
Item 2	.86	.81
Item 3	.72	.73
Item 4	.52	.55
Item 5	.73	.65
Item 7	.70	.68

than for the one-factor model. Factor correlations between the three factors were much lower than .80 at Time 1 and Time 2. The three-factor model of predictors for work-to-family facilitation, including supervisor support, perceived organisational support and work control as distinct variables, was selected for further analyses.

5.2.5 Work-Family Conflict

Separate confirmatory factor analysis was conducted to assess the factor structure of the work-family conflict instrument, including work-to-family interference and family-to-work interference. Combined confirmatory factor analyses were conducted to assess whether or not dimensions of work-family conflict were distinct from each other.

Table 5.12 indicates acceptable fit statistics for the work-to-family interference measure (Model 1), and the standardised factor loadings for all items

ranged from .76 to .91 at Time 1, and .77 to .92 at Time 2. The 5-item measure was retained for further analyses.

Table 5.12 Confirmatory factor analysis of work-to-family interference

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	19.87	5	3.97	98	.02	.05	42.87
Time 2							
Model 1	15.89	5	3.17	.97	.02	.06	35.89
Standardised Factor Loadings							
	Time 1	Time 2					
Item 1	.76	.77					
Item 2	.90	.88					
Item 3	.91	.92					
Item 4	.83	.85					
Item 5	.78	.79					

Table 5.13 indicates acceptable fit statistics for the family-to-work interference measure (Model 1), and the standardised factor loadings for the all items ranged from .71 to .85 at Time 1, and .76 to .87 at Time 2. The 5-item measure was retained for further analyses.

Table 5.13 Confirmatory factor analysis of family-to-work interference

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	19.64	5	3.92	98	.03	.06	40.64
Time 2							
Model 1	11.45	5	2.29	.98	.02	.06	31.45
Standardised Factor Loadings							
	Time 1	Time 2					
Item 1	.74	.83					
Item 2	.83	.86					
Item 3	.85	.87					
Item 4	.76	.78					
Item 5	.71	.76					

Confirmatory factor analyses of one- and two-factor models were conducted to assess whether or not work-to-family interference and family-to-work interference were distinct dimensions in this study. The one-factor model combined these two dimensions into a single factor, and the two-factor model consisted of work-to-family interference as the first factor, and family-to-work interference as the second factor.

Table 5.14 shows that the one-factor model yielded unacceptable fit indices at Time 1 and Time, but the two-factor model yielded acceptable fit indices. The AIC values for the two-factor model were also much smaller than for the one-factor model at Time 1 and Time 2. In addition, factor correlations between work-to-family interference and family-to-work interference were lower than .80 at Time 1 and Time 2. The two-factor model of work-family conflict, including work-to-family interference as the first factor and family-to-work interference as the second factor, was therefore selected for further analyses

Table 5.14 Combined confirmatory factor analyses of work-family conflict

Model	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	1029.11	35	29.40	.62	.17	.24	1069.11
2 Factor	141.65	34	4.17	.95	.05	.08	183.65
Factor Correlation:							
Work-to-Family Interference and Family-to-Work Interference: .50							
Time 2							
1 Factor	570.54	35	16.30	.54	.18	.27	610.54
2 Factor	101.78	34	2.99	.92	.06	.10	143.78
Factor Correlation:							
Work-to-Family Interference and Family-to-Work Interference: .52							

5.2.6 Work-Family Enrichment

Separate confirmatory factor analysis was conducted to assess the factor structure of the work-family enrichment instrument, including work-to-family facilitation variables (Development, Affect and Capital), and family-to-work facilitation variables (Development, Affect and Capital). Combined confirmatory factor analyses were conducted to assess whether or not the two dimensions of work-family enrichment were distinct from each other. As mentioned in previous chapters, the term "enrichment" is used to refer to the general discussion of positive interactions between work and family domains, whereas the term "facilitation" is used to describe the specific direction of positive interactions between work and family domains (that is, work-to-family facilitation and family-to-work facilitation).

Table 5.15 shows acceptable fit statistics for the work-to-family facilitation (Development) measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .86 to .93 at Time 1, and .82 to .99 at Time 2. The 3-item measure was therefore retained for further analyses.

Table 5.15 Confirmatory factor analysis of work-to-family facilitation (Development)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	0.04	1	0.04	1.00	.00	.00	10.04
Time 2							
Model 1	0.02	1	0.02	1.00	.00	.00	10.02
Standardised Factor Loadings							
	Time 1		Time 2				
Item 1	.86		.83				
Item 2	.93		.99				
Item 3	.90		.82				

Table 5.16 indicates acceptable fit statistics for the work-to-family facilitation (Affect) measure (Model 1) at Time 1 and Time 2. The standardised factor loadings for all items ranged from .92 to .98 at Time 1, and .89 to .97 at Time 2. The 3-item measure was therefore retained for further analyses.

Table 5.16 Confirmatory factor analysis of work-to-family facilitation (Affect)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	4.42	1	4.42	.99	.01	.05	14.42
Time 2							
Model 1	2.67	1	2.67	.99	.01	.06	12.67
Standardised Factor Loadings							
	Time 1	Time 2					
Item 1	.92	.89					
Item 2	.98	.97					
Item 3	.98	.96					

Table 5.17 indicates acceptable fit statistics for the work-to-family facilitation (Capital) measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .77 to .97 at Time 1, and .82 to .94 at Time 2. The 3-item measure was therefore retained for further analyses.

Table 5.17 Confirmatory factor analysis of work-to-family facilitation (Capital)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	4.17	1	4.17	.99	.01	.08	14.17
Time 2							
Model 1	3.70	1	3.70	.99	.01	.07	13.70
Standardised Factor Loadings							
	Time 1	Time 2					
Item 1	.77	.82					
Item 2	.97	.94					
Item 3	.97	.91					

Table 5.18 shows acceptable fit statistics for the family-to-work facilitation (Development) measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .94 to .96 at Time 1, and .90 to .93 at Time 2. The 3-item measure was therefore retained for further analyses.

Table 5.18 Confirmatory factor analysis of family-to-work facilitation (Development)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	4.21	1	4.21	.99	.01	.06	14.21
Time 2							
Model 1	2.55	1	2.55	.99	.00	.05	12.55
Standardised Factor Loadings							
	Time 1		Time 2				
Item 1	.96		.90				
Item 2	.95		.93				
Item 3	.94		.93				

Table 5.19 indicates acceptable fit statistics for the family-to-work facilitation (Affect) measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .88 to .97 at Time 1, and .94 to .97 at Time 2. The 3-item measure was therefore retained for further analyses.

Table 5.19 Confirmatory factor analysis of family-to-work facilitation (Affect)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	3.28	1	3.28	.99	.00	.05	13.28
Time 2							
Model 1	0.06	1	0.06	1.00	.00	.00	10.06
Standardised Factor Loadings							
	Time 1		Time 2				
Item 1	.88		.94				
Item 2	.98		.95				
Item 3	.97		.97				

Table 5.20 shows acceptable fit statistics for the family-to-work facilitation (Capital) measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .89 to .92 at Time 1, and .80 to .98 at Time 2. The 3-item measure was therefore retained for further analyses.

Table 5.20 Confirmatory factor analysis of family-to-work facilitation (Capital)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	1.06	1	1.06	1.00	.00	.01	11.06
Time 2							
Model 1	3.80	1	3.80	.99	.01	.06	13.80
Standardised Factor Loadings							
	Time 1		Time 2				
Item 1	.89		.84				
Item 2	.92		.98				
Item 3	.83		.80				

For assessing the distinction of different dimensions of work-family enrichment, combined confirmatory factor analyses on one- and six-factor models were executed. The one-factor model combined all dimensions of work-family enrichment into a single factor, and the six-factor model consisted of work-to-family facilitation (Development) as the first factor, work-to-family facilitation (Affect) as the second factor, work-to-family facilitation (Capital) as the third factor, family-to-work facilitation (Development) as the fourth factor, family-to-work facilitation (Affect) as the fifth factor, and family-to-work facilitation (Capital) as the sixth factor.

Table 5.21 shows that the one-factor model yielded unacceptable fit indices at Time 1 and Time 2, and the six-factor model yielded acceptable fit indices. The AIC values for the six-factor model were substantially smaller than for the one-factor model at Time 1 and Time 2.

Table 5.21 Combined confirmatory factor analyses of work-family enrichment

Model	χ^2	df	χ2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	6257.79	135	46.35	.37	.15	.30	6329.79
6 Factor	531.97	120	4.43	.91	.05	.08	633.97
Time 2							
1 Factor	2237.23	135	16.57	.38	.14	.27	2309.23
6 Factor	340.13	120	2.83	.85	.04	.09	442.13.

In addition, Table 5.22 indicates that factor correlations between all dimensions of work-family enrichment were lower than .80, although factor correlations between family-to-work facilitation (Development), family-to-work facilitation (Affect), and family-to-work Facilitation (Capital) were high (.60 to .79) at Time 1 and Time 2.

Table 5.22 Factor correlations of work-family enrichment

Factors	Time 1	Time 2
Factor 1 and Factor 2	.63	.53
Factor 1 and Factor 3	.61	.60
Factor 1 and Factor 4	.52	.51
Factor 1 and Factor 5	.41	.39
Factor 1 and Factor 6	.49	.49
Factor 2 and Factor 3	.40	.42
Factor 2 and Factor 4	.50	.58
Factor 2 and Factor 5	.43	.43
Factor 2 and Factor 6	.48	.49
Factor 3 and Factor 4	.49	.49
Factor 3 and Factor 5	.49	.49
Factor 3 and Factor 6	.50	.54
Factor 4 and Factor 5	.60	.65
Factor 4 and Factor 6	.70	.72
Factor 5 and Factor 6	.70	.79

Note. Factor 1 = Work-to-Family Facilitation (Development); Factor 2 = Work-to-Family Facilitation (Affect); Factor 3 = Work-to-Family Facilitation (Capital); Factor 4 = Family-to-Work Facilitation (Development); Factor 5 = Family-to-Work Facilitation (Affect); Factor 6 = Family-to-Work Facilitation (Capital)

Supported by the above results, the six-factor model of work-family facilitation, including work-to-family facilitation (Development) as the first factor, work-to-family facilitation (Affect) as the second factor, work-to-family facilitation (Capital) as the third factor, family-to-work facilitation (Development) as the fourth factor, family-to-work facilitation (Affect) as the fifth factor, and family-to-work facilitation (Capital) as the sixth factor, was selected for further analyses.

5.2.7 Criterion Variables in the Family Domain

Family Satisfaction

Family satisfaction was the only criterion variable in the family domain, and therefore a one-factor model was tested in the CFA. Table 5.23 presents acceptable fit statistics for the family satisfaction measure (Model 1) at Time 1 and Time 2, and the standardised factor loadings for all items ranged from .87 to .95 at Time 1, and .88 to .92 at Time 2. The 3-item measure of family satisfaction was therefore retained for further analyses.

Table 5.23 Confirmatory factor analysis of family satisfaction

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	4.42	1	4.42	.99	.01	.08	14.42
Time 2							
Model 1	2.58	1	2.58	.99	.01	.09	12.58
Standardised Factor Loadings							
	Time 1		Time 2				
Item 1	.87		.88				
Item 2	.95		.92				
Item 3	.90		.91				

5.2.8 Criterion Variables in the Work Domain

Supervisor-Rated Work performance

Self-rated work performance, organizational citizenship behaviours, and counterproductive workplace behaviours were criterion variables in the work domain at Time 1 and Time 2. As described above, these measures were not included in the CFA. Supervisor-rated work performance was also only measured at Time 2. A one-factor model was tested in the CFA.

Table 5.24 shows acceptable fit statistics for the supervisor-rated work performance measure (Model 1) at Time 2, and the standardised factor loadings for all items ranged from .86 to .94. The 4-item measure of supervisor-rated work performance was retained for further analyses.

Table 5.24 Confirmatory factor analysis of supervisor-rated work performance

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 2							
Model 1	.31	2	.16	1.00	.00	.00	26.31
Standardised Factor Loadings							
Item 1	.89						
Item 2	.87						
Item 3	.86						
Item 4	.94						

5.2.9 Criterion Variables in the Personal Domain

Physical symptoms and psychological strain were criterion variables in the personal domain. As described before (page 76), the physical symptoms measure was not included in the CFA, whereas the psychological strain measure was included in the CFA.

Psychological Strain

In the present study, the GHQ-12 developed by Goldberg (1978) was adopted to measure levels of psychological strain among the participants. This scale has become a popular measure of strain, and has been found to have good validity in previous studies (e.g. Mäkikangas, et al., 2006). However, there is debate on its factor structure. Previous studies have identified one-, two-, or three-factor structures for the GHQ-12 (see Table 5.25).

Table 5.25 One-, two-, and three-factor structure of the GHQ-12

Item	One-factor	Two-factor	Two-factor (GHQ-8)	Three-factor
Been able to concentrate on whatever you are doing	Strain	S/D	--	S/D
Lost much sleep over worry	Strain	A/D	--	A/D
Felt that you were playing a useful part in things	Strain	S/D	--	S/D
Felt capable of making decisions about things	Strain	S/D	S/D	S/D
Felt constantly under strain	Strain	A/D	--	A/D
Felt that you couldn't overcome your difficulties	Strain	A/D	A/D	A/D
Been able to enjoy your normal day-to-day activities	Strain	S/D	S/D	S/D
Been able to face up to your problems	Strain	S/D	S/D	S/D
Been feeling unhappy and depressed	Strain	A/D	A/D	A/D
Been losing self-confidence in yourself	Strain	A/D	A/D	L/C
Been thinking of yourself as a worthless person	Strain	A/D	A/D	L/C
Been feeling reasonably happy, all things considered	Strain	S/D	S/D	S/D

Note. A/D = Anxiety/depression; S/D = Social dysfunction; L/C = Loss of confidence

The one-factor model of GHQ-12 was supported by Banks and Jackson (1982), and Winefield, Goldney, Winefield, and Tiggemann (1989). Some studies (e.g. Werneke, Goldberg, & Ustun, 2000) showed that the two-factor model, including factors of "Anxiety/Depression" and "Social Dysfunction", was

supported. Kalliath, O'Driscoll and Brough (2004) also found a two-factor model of GHQ-12, although they needed to omit items 1, 2, 3 and 5 to obtain good model fit, which they referred to as the GHQ-8. Furthermore, Greatz (1991) suggested a three-factor model, including "Anxiety/Depression", "Social Dysfunction", and "Loss of Confidence". In order to determine the best factor structure of the GHQ-12, confirmatory factor analyses on one-, two-, and three-factor models of the GHQ-12 were conducted.

Table 5.26 shows that the one-factor model and the original two factor model yielded unacceptable fit indices for the instrument at Time 1 and Time 2. However, the revised two-factor model (GHQ-8) yielded better fit indices at Time 1 and Time 2, although they were still not adequate. Similar results were also found for the three-factor model. However, the AIC values for the revised two-factor model were smaller than for all other models at Time 1 and Time 2.

Table 5.26 Confirmatory factor analyses of GHQ

Model	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	888.79	54	16.46	.72	.13	.17	936.79
2 Factor (GHQ-12)	375.64	53	7.08	.88	.07	.11	425.64
2 Factor (GHQ-8)	143.83	19	7.57	.93	.05	.11	177.83
3 Factor	329.58	51	6.46	.90	.07	.10	383.58
Time 2							
1 Factor	391.57	54	7.25	.71	.13	.17	439.57
2 Factor (GHQ-12)	170.47	53	3.21	.87	.08	.10	220.47
2 Factor (GHQ-8)	80.48	19	4.23	.91	.07	.12	114.48
3 Factor	154.18	51	3.02	.88	.07	.10	208.18

Therefore, the revised two-factor model, including "Anxiety/Depression" and "Social Dysfunction", was selected for further analyses.

As described above, the fit indices of the revised two-factor model for GHQ (GHQ-8) were still not adequate, and accordingly another round of confirmatory factor analysis was conducted for further modification of the instrument.

Table 5.27 shows unacceptable fit statistics for the GHQ-8 (Model 1) at Time 1 and Time 2. Therefore, the item with the lowest factor loadings (.53 at Time 1; .42 at Time 2) was deleted, and revised confirmatory factor analysis was executed. The item deleted was "Been feeling reasonably happy, all things considered" (Item 4 in Factor 1).

Table 5.27 Confirmatory factor analysis of the GHQ-8

Model	**χ^2**	**df**	**χ^2/df**	**GFI**	**SRMR**	**RMSEA**	**AIC**
Time 1							
Model 1	143.83	19	7.57	.93	.05	.11	177.83
Model 2 (Item 4 Deleted)	64.98	13	4.99	.97	.03	.08	94.98
Time 2							
Model 1	80.48	19	4.23	.91	.07	.12	114.48
Model 2 (Item 4 Deleted)	29.23	13	2.25	.96	.05	.07	59.23

Standardised Factor Loadings for Model 2

	Factor 1: Social Dysfunction			Factor 2: Anxiety/Depression	
	Time 1	Time 2		Time 1	Time 2
Item 1	.65	.76	Item 5	.64	.64
Item 2	.62	.56	Item 6	.76	.76
Item 3	.83	.83	Item 7	.91	.91
			Item 8	.87	.87

Factor Correlations (Factor 1 and Factor 2): Time 1: .55; Time 2: .44

Results in Table 5.27 indicated acceptable fit statistics for the 7-item instrument (Model 2), and factor correlations between two factors were also lower than .80 at Time 1 and Time 2. The standardised factor loadings of the remaining items ranged from.62 to .91 at Time 1, and .56 to .93 at Time 2. The revised two-factor model with seven items was retained.

5.2.10 Moderators

Optimism and Confucian work values were hypothesised as moderator variables between predictor variables and work-family conflict and enrichment. Separate confirmatory factor analyses were conducted to assess the factor structure of each instrument.

Optimism

Table 5.28 indicates unacceptable fit statistics for the optimism measure (Model 1) at Time 1 and Time 2. Accordingly, the item with the lowest factor loadings (.37 at Time 1; .56 at Time 2) was deleted, and confirmatory factor analysis of the revised instrument was conducted. The item deleted was "I hardly ever expect things to go my way" (Item 4). The results showed that fit statistics for the revised instrument (Model 2) at Time 2 were still unacceptable. An additional item with the lowest factor loadings (.50 at time 1; .57 at Time 2) was deleted, and confirmatory factor analysis was conducted again. The item deleted was "In uncertain times, I always expect the best" (Item 1). After deleting two items, acceptable fit statistics for the revised instrument (Model 3) were shown at Time 1 and Time 2. The standardised factor loadings for remaining items ranged from .58 to .84 at Time 1, and .63 to .75 at Time 2. Hence, the 4-item instrument was retained for further analyses.

Table 5.28 Confirmatory factor analysis of optimism

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	161.46	9	17.94	.91	.08	.18	185.46
Model 2 (Item 4 Deleted)	24.75	5	4.95	.98	.03	.08	44.75
Model 3 (Item 1 and 4 Deleted)	5.51	2	2.76	1.00	.02	.06	21.51
Time 2							
Model 1	71.34	9	7.93	.89	.08	.18	95.34
Model 2 (Item 4 Deleted)	32.85	5	6.57	.94	.06	.16	52.85
Model 3 (Item 1 and 4 Deleted)	6.36	2	3.18	.99	.03	.10	20.00
Standardised Factor Loadings for Model 3							
	Time 1	Time 2					
Item 2	.58	.63					
Item 3	.84	.75					
Item 5	.58	.65					
Item 6	.70	.69					

Confucian Work Values

The Confucian Work Values measure consists of six items for the "CGF" factor, and ten items for the "LEACH" factor. The "CGF" factor refers to Confucian elements that support Chinese employees to plan strategies for accomplishing work tasks, whereas the "LEACH" factor refers to Confucian elements that assist employees in successfully finishing assigned duties in the workplace. Separate confirmatory factor analysis was conducted to assess the factor structure of the Confucian work values instrument, including the "CGF" factor and the "LEACH" factor. Combined confirmatory factor analyses were

conducted to assess whether or not the two dimensions of Confucian work values were distinct from each other.

Table 5.29 shows unacceptable fit statistics for the Confucian Work Values (CGF Factor) measure (Model 1) at Time 1 and Time 2. Factor loadings of two items were lower than .30 at Time 1 or Time 2. These items were deleted in sequence, and confirmatory factor analysis was executed after each deletion.
The deleted items were "There are real differences between ideal and practice"

Table 5.29 Confirmatory factor analysis of Confucian work values (CGF Factor)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	109.59	9	12.18	.93	.09	.15	133.59
Model 2 (Item 1 and 2 Deleted)	67.11	2	33.55	.94	.09	.25	83.10
Model 3 (Item 1, 2 and 6 Deleted)	3.66	1	3.66	.99	.02	.06	13.66
Time 2							
Model 1	36.21	14	2.57	.93	.07	.11	64.20
Model 2 (Item 1 and 2 Deleted)	3.62	2	1.81	.99	.03	.06	19.62
Model 3 (Item 1, 2 and 6 Deleted)	2.21	1	2.21	.99	.02	.03	12.21

Standardised Factor Loadings for Model 3		
	Time 1	Time 2
Item 3	.74	.71
Item 4	.75	.83
Item 5	.42	.45

(Item 1, factor loading: .13 at Time 1; .06 at Time 2), and "In doing things one should emphasize practicality rather than theories" (Item 2, factor loadings: .25 at Time 1; .10 at Time 2).

After deleting two items, results in Table 5.29 still showed unacceptable fit statistic for the revised instrument (Model 2) at Time 1. Therefore, another item with the lowest factor loading was deleted, and confirmatory factor analysis was also implemented after deletion. The additional item was "I believe that emphasizing interpersonal relationship and individual's social status will be better to solve problems when compared with using regulations" (Item 6, factor loadings: .30 at Time 1; .28 at Time 2). After deleting three items, results in Table 5.29 show acceptable fit statistic for the revised instrument (Model 3) at Time 1 and Time 2. The standardized factor loadings for remaining items ranged from .42 to .75 at Time 1, and .45 to .83 at Time 2. Hence, the 3-item measure was retained for further analyses.

Table 5.30 shows unacceptable fit statistics for the Confucian Work Values (LEACH Factor) measure (Model 1) at Time 1 and Time 2. Factor loadings of three items were lower than .30 at Time 1 or Time 2. They were deleted in sequence, and confirmatory factor analysis was executed after each deletion. These deleted items were "Careful deliberation and thorough contemplation are always better for my success" (Item 8, factor loading: .24 at Time 1; .17 at Time 2), "People in high positions should maintain the dignity of their position" (Item 15, factor loading: .21 at Time 1; .18 at Time 2) and "Subordinates should consistently show loyalty and obedience" (Item 16, factor loading: .30 at Time 1; .25 at Time 2). Results in Table 5.30 still show unacceptable fit statistic for the revised instrument (Model 2) at Time 1. Another item with the lowest factor loading was deleted, and confirmatory factor analysis was also implemented after

Table 5.30 Confirmatory factor analysis of Confucian work values (LEACH Factor)

	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
Model 1	270.79	35	7.74	.90	.07	.12	310.79
Model 2 (Item 8, 15 and 16 Deleted)	115.67	14	8.26	.94	.06	.12	143.67
Model 3 (Item 8, 14, 15 and 16 Deleted)	35.73	9	3.97	.99	.05	.07	57.73
Time 2							
Model 1	117.67	35	3.36	.89	.08	.11	157.67
Model 2 (Item 8, 15 and 16 Deleted)	36.55	14	2.61	.96	.05	.08	64.55
Model 3 (Item 8, 14, 15 and 16 Deleted)	23.97	9	2.66	.97	.05	.08	47.98

Standardised Factor Loadings for Model 3

	Time 1	Time 2
Item 7	.60	.53
Item 9	.84	.86
Item 10	.72	.78
Item 11	.42	.47
Item 12	.43	.50
Item 13	.45	.46

deletion. The deleted item was "I can bear short-term frustrations until certain levels of accomplishments have been achieved" (Item 14, factor loadings: .31 at Time 1; .30 at Time 2). After deleting four items, the results show acceptable fit statistic for the revised instrument (Model 3) at Time 1 and Time 2, and the standardized factor loadings for remaining items ranged from .42 to .84 at Time 1, and .47 to .86 at Time 2. The 6-item measure was retained for further analyses.

Combined confirmatory factor analyses of one- and two-factor models were conducted to assess whether or not Confucian work values (CGF Factor) and Confucian work values (LEACH Factor) were distinct dimensions. The one-factor model combined both dimensions of Confucian work values into a single factor and the two-factor model consisted of Confucian work values (CGF Factor) as the first factor, and Confucian work values (LEACH Factor) as the second factor. Table 5.31 indicates that the one-factor model yielded unacceptable fit indices at Time 1 and Time 2, and the two-factor model yielded acceptable fit indices. The AIC values for the two-factor model were smaller than for the one-factor model at Time 1 and Time 2, and factor correlation between these two dimensions was lower than .80 at Time 1 and Time 2. The two-factor model of Confucian work values, including the "CGF" factor as the first factor and "LEACH" factor as the second factor, was selected for further analyses.

Table 5.31 Combined confirmatory factor analyses of Confucian work values.

Model	χ^2	df	χ^2/df	GFI	SRMR	RMSEA	AIC
Time 1							
1 Factor	324.16	27	12.02	.86	.10	.08	473.16
2 Factor	99.24	26	3.82	.96	.05	.07	137.24
Factor Correlation: Confucian Work Values (CGF and LEACH Factors): .26							
Time 2							
1 Factor	133.78	27	4.96	.85	.09	.09	186.78
2 Factor	57.63	26	2.22	.94	.06	.07	95.63
Factor Correlation: Confucian Work Values (CGF and LEACH Factors): .36							

5.3 Analysis of Reliability and Skewness and Kurtosis Statistics

Table 5.32 presents Cronbach alpha coefficients of the final research instruments. All instruments demonstrated an acceptable level of internal consistency, with alphas ranging from .70 to .97 at Time 1 and Time 2.

The normality of all variables was assessed by the skewness and kurtosis statistics. When these statistics are within the range of plus and minus three, the distribution of the variables is considered as normal (Tabachnick & Fidell, 2007). Table 5.33 presents that all variables had appropriate levels of skewness and kurtosis statistics, which are indicative of a normal distribution.

5.4 Chapter Summary

This chapter has described the results of confirmatory factor analyses of the research instruments. As described in Chapter 4, organizational constraints, family support, physical symptoms, self-rated work performance, organizational citizenship behaviours, and counterproductive workplace behaviours measures were not included in the CFA and reliability analysis. The results showed that quantitative workload, work-role conflict, family workload and family-role conflict measures were each single dimensions. Supervisor support, perceived organizational support, work control and family control measures were also single dimensions. The work-family conflict measure contained two dimensions, whereas the work-family enrichment measure contained six dimensions. Family satisfaction and supervisor-rated work performance were each single dimensions measure, and the psychological strain measure had two dimensions. The optimism measure was a single dimension measure, and the Confucian work values measure had two dimensions. In addition, all of the above measures were distinct. Results of cross-sectional analyses for the Time 1 data are described in

Chapter 6, and results of cross-sectional analyses for the Time 2 data are showed in Chapter 7. Results of longitudinal analyses are described in Chapter 8.

Table 5.32 Reliability coefficient of research instruments

Variable	Alpha	
	Time 1	Time 2
1. Quantitative Workload	.87	.90
2. Organisational Constraints	n.a.	n.a.
3. Work Control	.85	.84
4. Work-Role Conflict	.80	.81
5. Supervisor Support	.86	.84
6. Perceived Organisational Support	.84	.83
7. Family Workload	.83	.81
8. Family-Role Conflict	.81	.84
9. Family Support	n.a.	n.a.
10.Family Control	.84	.80
11.Work-to-Family Interference	.92	.92
12.Family-to-Work Interference	.88	.81
13.Work-to-Family Facilitation (Development)	.93	.90
14. Work-to-Family Facilitation (Affect)	.97	.96
15. Work-to-Family Facilitation (Capital)	.93	.91
16. Family-to-Work Facilitation (Development)	.96	.94
17. Family-to-Work Facilitation (Affect)	.96	.97
18. Family-to-Work Facilitation (Capital)	.91	.90
19.Family Satisfaction	.93	.93
20.Organisational Citizenship Behaviours	n.a.	n.a.
21.Self-Rated Work Performance	n.a.	n.a.
22.Supervisor-Rated Work Performance	n.a.	.94
23.Physical Symptoms	n.a.	n.a.
24.Psychological Strain (Social Dysfunction)	.74	.87
25.Psychological Strain (Anxiety/Depression)	.75	.88
26. Self-Rated Counterproductive Workplace Behaviours	n.a.	n.a.
27. Supervisor-Rated Counterproductive Workplace Behaviours	n.a.	n.a.
28.Optimism	.76	.78
29.Confucian Work Values (CGF Factor)	.70	.72
30. Confucian Work Values (LEACH Factor)	.71	.71

Table 5.33 Skewness and Kurtosis statistics of all variables

Variable	Skewness		Kurtosis	
	Time 1	Time 2	Time 1	Time 2
1. QW	.62	.65	-.08	-.31
2. OC	.85	.67	.31	-.19
3. WC	-.83	-.68	.23	-.03
4. WRCON	-.18	-.09	-.49	-.35
5. SFS	-.44	-.32	-.39	-.34
6. POS	-.16	-.02	-.27	-.23
7. FMWORK	.66	.60	.04	-.13
8. FRCON	.25	.19	-.55	-.77
9. FMSUPT	1.50	1.27	2.58	2.25
10.FMCONT	-.49	-.31	-.28	-.36
11.WFI	.12	.08	-.93	-.88
12.FWI	.80	.63	.44	-.06
13.WFDEV	-.45	-.29	-.37	-.36
14.WFAFF	-.31	-.39	-.74	.12
15.WFCAP	-.58	-.45	-.31	.10
16.FWDEV	-.31	-.40	-.50	-.25
17.FWAFF	-.65	-.76	-.02	.43
18.FWCAP	-.47	-.65	-.02	.52
19.FS	-.99	-.94	.85	.70
20.OCB	-.03	-.41	-.03	.81
21.WP	-.56	-.43	.00	.24
22.WPS	n.a.	-.42	n.a.	-.14
23.PHYS	.61	.47	.19	-.17
24.PSYSSD	.42	.36	.18	-.11
25.PSYSAD	.81	.70	.52	.19
26.CWB	.93	1.15	.10	1.41
27.CWBS	n.a.	1.09	n.a.	1.09
28.OPT	-.25	.47	-.32	.52
29.CVALUECGF	-.42	.45	-.26	.37
30.CVALUELEA	-.56	.54	-.34	.44
31.WHOURS	.97	1.19	2.78	2.08
32.FHOURS	1.71	1.54	2.87	2.53
33.DEPEND	.84	.84	.36	1.10

Note: See footnotes on pate 109

Footnotes for Table 5.33

Note. QW = Quantitative Workload, OC = Organizational Constraints, WC = Work Control, WRCON = Work-Role Conflict, SFS = Supervisor support, POS = Perceived Organizational support, FMWORK = Family Workload, FRCON = Family-Role Conflict, FMSUPT = Family Support, FMCONT = Family Control, WFI = Work-to-Family Interference, FWI = Family-to-Work Interference, WFDEV = Work-to-Family Facilitation (Development), WFAFF = Work-to-Family Facilitation (Affect), WFCAP = Work-to-Family Facilitation (Capital), FWDEV = Family-to-Work Facilitation (Development), FWAFF = Family-to-Work Facilitation (Affect), FWCAP = Family-to-Work Facilitation (Capital), FS = Family Satisfaction, OCB = Organizational Citizenship Behaviours, WP = Self-Rated Work Performance, WPS = Supervisor-Rated Work Performance, PHYS = Physical Symptoms, PSYSSD = Psychological Strain (Social Dysfunction), PSYSAD = Psychological Strain (Anxiety/Depression), CWB = Self-Rated Counterproductive Workplace Behaviours, CWBS = Supervisor-Rated Counterproductive Workplace Behaviours, OPT = Optimism, CVALUECGF = Confucian Work Values (CGF Factor), CVALUELEA = Confucian Work Values (LEACH Factor), WHOURS = Total Working Hours per Week, FHOURS = Total Working Hours in Family per Week, DEPEND = Total Number of Dependents

CHAPTER 6

TIME 1 RESULTS

6.1 Descriptive Statistics

This chapter presents the results of cross-sectional analyses for the data collected at Time 1, and includes the descriptive statistics (e.g. means and standard deviations), correlational analysis, and the moderation analysis for optimism and Confucian work values. Cross-sectional hypothesis testing at Time 1 is also described in this chapter.

Table 6.1 presents means, standard deviations, and response scales for all variables at Time 1. Participants reported moderate levels of quantitative workload, and moderately low levels of organizational constraints, family workload, family-role conflict, and family support. They also perceived moderate levels of work-role conflict, supervisor support, perceived organizational support, work control, and family control. The mean working hours per week among the participants was 46.77 hours (*SD* = 7.60), and the mean working hours in the family per week was 11.25 hours (*SD* = 10.93). The mean number of dependents was 1.39.

Table 6.1 shows that the participants reported moderately low levels of work-to-family interference and family-to-work interference. Participants perceived moderate levels of work-to-family facilitation variables (Development, Affect and Capital). Furthermore, they also reported moderate levels of family-to-work facilitation variables (Development, Affect and Capital).

On the other hand, the participants reported moderately low levels of physical symptoms, psychological strain (Anxiety/Depression), and self-rated counterproductive workplace behaviours. They also perceived moderate levels

Table 6.1 Means, standard deviations, and response scales of all variables at Time 1

Variable	Mean	S.D.	Response Scale
1. Quantitative Workload	2.55	.96	1 – 5
2. Organisational Constraints	2.09	.84	1 – 5
3. Work Control	4.97	1.29	1 – 7
4. Work-Role Conflict	4.03	1.13	1 – 7
5. Supervisor Support	4.35	1.45	1 – 7
6. Perceived Organisational Support	4.43	1.06	1 – 7
7. Family Workload	3.09	1.25	1 – 7
8. Family-Role Conflict	3.34	1.26	1 – 7
9. Family Support	2.21	.08	1 – 5
10.Family Control	4.79	1.17	1 – 7
11.Work-to-Family Interference	3.62	1.50	1 – 7
12.Family-to-Work Interference	2.67	1.16	1 – 7
13.Work-to-Family Facilitation (Development)	4.19	1.38	1 – 7
14. Work-to-Family Facilitation (Affect)	3.89	1.51	1 – 7
15. Work-to-Family Facilitation (Capital)	4.15	1.39	1 – 7
16. Family-to-Work Facilitation (Development)	3.91	1.39	1 – 7
17. Family-to-Work Facilitation (Affect)	4.42	1.35	1 – 7
18. Family-to-Work Facilitation (Capital)	4.19	1.29	1 – 7
19.Family Satisfaction	5.19	1.22	1 – 7
20.Organisational Citizenship Behaviours	4.75	.84	1 – 7
21.Self-Rated Work Performance	4.46	1.33	1 – 7
22.Physical Symptoms	3.04	1.05	1 – 7
23.Psychological Strain (Social Dysfunction)	3.44	1.03	1 – 7
24.Psychological Strain (Anxiety/Depression)	2.96	1.18	1 – 7
25. Self-Rated Counterproductive Workplace Behaviours	2.16	.78	1 – 7
26.Optimism	4.47	.78	1 – 7
27.Confucian Work Values (CGF Factor)	4.53	.73	1 – 7
28. Confucian Work Values (LEACH Factor)	4.50	.71	1 – 7
29. Total Working Hours per Week	46.77	7.60	n.a.
30. Total Working Hours in Family per Week	11.25	10.93	n.a.
31.Total Number of Dependents	1.39	1.30	n.a.

of psychological strain (Social Dysfunction) and self-rated work performance, and moderately high levels of family satisfaction. The participants reported moderate levels of optimism, Confucian work values (CGF and LEACH Factors).

6.2 Correlational Analysis

Table 6.2 presents intercorrelations among the main variables at Time 1. Quantitative workload, organizational constraints, work-role conflict, and the total working hours per week were positively related to work-to-family interference. Therefore, hypotheses 1 (a), 2 (a), and 3 (a) were supported. Hypotheses 4, 5, and 6 are longitudinal hypotheses, and they are discussed in Chapter 8.

Family workload, the total working hours in the family per week, the total number of dependents and family-role conflict were positively related to family-to-work interference. Hence, hypotheses 7 (a) and 8 (a) were supported. Hypotheses 9 and 10 are longitudinal hypotheses, and accordingly they are discussed in Chapter 8.

Supervisor support and work control were positively related to work-to-family facilitation variables (Development, Affect and Capital), which supported hypotheses 27 (a) and 29 (a). Perceived organisational support was positively associated with work-to-family facilitation variables (Affect and Capital). Therefore, hypothesis 28 (a) was partially supported because perceived organisational support was not significantly related to work-to-family facilitation (Development). Hypotheses 30, 31, and 32 are longitudinal hypotheses, and they are discussed in Chapter 8.

Family support was positively related to family-to-work facilitation variables (Development, Affect and Capital), which supported hypothesis 33 (a). However, family control was positively associated family-to-work facilitation variables

Table 6.2 Intercorrelations of main variables at Time 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. QW	--													
2. OC	.49***	--												
3. WC	-.15**	-.33***	--											
4. WRCON	.30***	.51***	-.07	--										
5. SFS	-.13**	-.19***	.27***	-.06	--									
6. POS	-.29***	-.28***	.17***	-.30***	.21***	--								
7. FMWORK	.17***	.16***	.00	.19***	.06	-.18***	--							
8. FRCON	.12**	.22***	-.05	.33***	.04	-.25***	.58***	--						
9. FMSUPT	.02	.10*	-.02	.06	.04	-.02	.10*	.05	--					
10.FMCONT	-.17***	-.27***	.13**	-.23***	.11*	.22***	-.49***	-.51***	-.04	--				
11.WFI	.47***	.39***	-.16***	.42***	-.09*	-.37***	.23***	.24***	.08	-.25***	--			
12.FWI	.21***	.26***	-.11*	.29***	-.00	-.21***	.37***	.38***	.18***	-.35***	.48***	--		
13.WFDEV	-.06	-.14**	.13**	-.03	.30***	.08	.05	.10*	.09*	.09*	-.05	.05	--	
14.WFAFF	-.12**	-.19***	.19***	-.14**	.29***	.16***	.05	.07	.10*	.12**	-.15**	.12**	.62***	--

Table 6.2 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
15.WFCAP	-.06	-.20***	.30***	-.10*	.29***	.12**	.08	.07	.06	.12**	-.02	.11*	.62***	.77***
16.FWDEV	.01	-.04	.06	.03	.18***	.04	.04	.13**	.12**	.07	.04	.15**	.49***	.49***
17.FWAFF	-.03	-.08	.13**	-.00	.22***	.03	-.13**	-.03	.11*	.29***	.01	-.01	.41***	.42***
18.FWCAP	.00	-.08	.09*	-.03	.20***	.09*	-.01	.07	.15**	.17***	-.01	.03	.47***	.47***
19.FS	-.07	-.11*	.15**	-.02	.20***	.12**	-.27***	-.25***	.09	.56***	-.17**	-.15**	.17***	.19***
20.OCB	.16***	.07	.20***	.19***	.23***	-.02	.10*	.08	.10*	.09*	.11*	-.10*	.22***	.17***
21.WP	.03	-.12**	.24***	-.03	.09	.01	.08	-.02	-.07	.15**	-.16*	-.16***	.03	.08
22.PHYS	.41***	.43***	-.19***	.33***	-.09*	-.22***	.28***	.21***	.10*	-.32***	.47***	.28***	-.08	-.15**
23.PSYSSD	.10*	.20***	-.39***	.08	-.21***	-.15**	.03	.06	-.02	-.28***	.14**	.14**	-.23***	-.24***
24.PSYSAD	.22***	.37***	-.31***	.24***	-.15**	-.20***	.20***	.18***	.02	-.39***	.32***	.20***	-.12**	-.20***
25.CWB	.08	.36***	-.22***	.19***	-.12**	-.14***	.11*	.12**	.06	-.22***	.12**	.19***	-.17***	-.16***
26.WHOURS	.35***	.20***	-.06	.14**	-.05	-.13**	.03	.05	.00	-.05	.34***	.15***	.03	-.12**
27.FHOURS	-.11*	-.11*	.06	-.04	.07	.03	.09*	.12***	.09*	-.04	-.05	.11*	.06	.13**
28.DEPEND	.09*	.00	-.01	.07	.04	-.08	.27***	.23***	.17**	-.12**	.10*	.15**	.14**	.13**

Table 6.2 (continued)

	15	16	17	18	19	20	21	22	23	24	25	26	27	28
15.WFCAP	--													
16.FWDEV	.50***	--												
17.FWAFF	.48***	.60***	--											
18.FWCAP	.50***	.66***	.67***	--										
19.FS	.19***	.22***	.43***	.29***	--									
20.OCB	.20***	.20***	.24***	.22***	.23***	--								
21.WP	.17***	.04	.14**	.12***	.11*	.27***	--							
22.PHYS	-.12**	.03	-.06	-.03	-.13**	.16***	-.06	--						
23.PSYSSD	-.33***	-.19***	-.29***	-.23***	-.28***	-.33***	-.36***	.12**	--					
24.PSYSAD	-.23***	-.01	-.17***	-.09*	-.24***	-.13**	-.31***	.50***	.46***	--				
25.CWB	-.19***	-.12**	-.18***	-.17***	-.16***	-.16***	-.26***	.21***	.23***	.29***	--			
26.WHOURS	-.04	.09*	.02	.02	-.02	.15**	-.06	.25***	.07	.28***	.10*	--		
27.FHOURS	.13**	.10*	.06	.17***	.04	.01	.00	-.03	-.05	-.04	-.09	-.06	--	
28.DEPEND	.11*	.13**	.07	.11*	.03	.14**	.02	-.05	.02	.06	-.04	.01	.26***	--

Note. QW = Quantitative Workload, OC = Organizational Constraints, WC = Work Control, WRCON = Work-role Conflict, SFS = Supervisor support, POS = Perceived Organizational Support, FMWORK= Family Workload, FRCON = Family-Role Conflict, FMSUPT = Family Support, FMCONT = Family Control, WFI = Work-to-Family Interference, FWI = Family-to-Work Interference, WFDEV = Work-to-Family Facilitation (Development), WFAFF = Work-to-Family Facilitation (Affect), WFCAP = Work-to-Family Facilitation (Capital), FWDEV = Family-to-Work Facilitation (Development), FWAFF = Family-to-Work Facilitation (Affect), FWCAP = Family-to-Work Facilitation (Capital), FS = Family Satisfaction, OCB = Organizational Citizenship Behaviours, WP = Self-Rated Work Performance, PHYS = Physical Symptoms, PSYSSD = Psychological Strains (Social Dysfunction), PSYSAD = Psychological Strains (Anxiety/Depression), CWB = Self-Rated Counterproductive Workplace Behaviours, WHOURS = Total Working Hours per Week, FHOURS = Total Working Hours in Family per Week, DEPEND = Total Number of Dependents

** p < .05, ** p < .01, *** p < .001*

(Affect and Capital). Therefore, hypothesis 34 (a) was partially supported because family control was not significantly related to family-to-work facilitation (Development). Hypotheses 35 and 36 are longitudinal hypotheses, and they are discussed in Chapter 8.

Work-to-family interference was positively related to physical symptoms, psychological strain (Social Dysfunction), and psychological strain (Anxiety/Depression). Hypotheses 11 (a) and 13 (a) were supported. Work-to-family interference was negatively associated with family satisfaction, and therefore hypothesis 15 (a) was supported. Hypotheses 16, 17, 18, 19 and 20 are longitudinal hypotheses. They are discussed in Chapter 8.

Family-to-work interference was positively associated with physical symptoms, psychological strain (Social Dysfunction), psychological strain (Anxiety/Depression) and self-rated counterproductive workplace behaviours. Hypotheses 12 (a), 14 (a) and 23 (a) were supported. Family-to-work interference was also negatively related to organizational citizenship behaviours and self-rated work performance. These results support hypotheses 21 (a) and 22 (a). Hypotheses 24, 25 and 26 are longitudinal hypotheses, and they are discussed in Chapter 8.

Table 6.2 indicates that work-to-family facilitation variables (Development, Affect and Capital) were positively related to family satisfaction, but negatively associated with psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression). These findings support hypotheses 39 (a) and 41 (a). Work-to-family facilitation variables (Affect and Capital) were also negatively associated with physical symptoms. Hypothesis 37 (a) was partially supported because work-to-family facilitation (Development) was not significantly related to physical symptoms.

Family-to-work facilitation variables (Development Affect and Capital) were negatively related to psychological strain (Social Dysfunction), but only family-to-work facilitation variables (Affect and Capital) were also negatively associated with psychological strain (Anxiety/Depression). Accordingly, hypothesis (a) 40 was partially supported because family-to-work facilitation (Development) was not significantly related to psychological strain (Anxiety/Depression). Furthermore, family-to-work facilitation variables (Development, Affect and Capital) were not significantly associated with physical symptoms. Hypothesis 38 (a) was not supported. Hypotheses 42, 43, 44, 45 and 46 are longitudinal hypotheses, and they are discussed in Chapter 8.

In addition, family-to-work facilitation variables (Development Affect and Capital) were negatively related to self-rated counterproductive workplace behaviours, and positively associated with organizational citizenship behaviours. Hypotheses 48 (a) and 49 (a) were supported. Family-to-work facilitation variables (Affect and Capital) were also positively related to self-rated work performance. These results partially support hypothesis 47 (a) because family-to-work facilitation (Development) was not significantly associated with self-rated work performance. Hypotheses 50, 51, and 52 are longitudinal hypotheses, and they are discussed in Chapter 8. Overall, 77% of my hypotheses were fully supported, whereas 19% of my hypotheses were partially supported by the correlational results at Time 1.

6.3 Analysis of Cross-Sectional Moderating Effects

Hierarchical regression analyses (Cohen & Cohen, 1983) were conducted to investigate cross-sectional moderating effects of optimism and Confucian work values between predictor variables and work-family conflict and enrichment while controlling for demographic variables at Time 1. Predictor variables used in the

analyses were quantitative workload, organizational constraints, work-role conflict, the total working hours per week, family workload, family-role conflict, the total working hours in the family per week, the total numbers of dependents, supervisor support, perceived organizational support, work control, family support and family control. Demographic variables associated with work-family conflict or enrichment were entered in the first step. For the hierarchical regression equation of work-family conflict, gender and age were control variables, and therefore they were entered in the first step of this equation. For the hierarchical regression equation of work-family-enrichment, age, marital status, educational level, tenure in the company, occupational tenure, and job rank were control variables, and accordingly they were entered in the first step of this equation. Predictor variables, optimism, and Confucian work values were entered in the next step. In the third step, interaction terms between the predictor variables and the moderators were entered. Before conducting the analyses, predictor and moderator variables were centred to address multicollinearity among those variables (Aiken & West, 1991).

As mentioned in Chapter 3, optimism was examined as a moderator of the relationships between predictor variables, family-to-work interference and family-to-work enrichment, whereas Confucian work values were examined as moderators of the relationships between predictor variables, work-to-family interference and work-to-family enrichment in the present study.

Table 6.3 presents the cross-sectional moderating effects of Confucian work values on work-to-family interference at Time 1. The results (step 3) showed that eight interaction terms explained 1% of the variance in work-to-family inference, but only the interaction term of work-role conflict and Confucian work values (CGF Factor) was significant. In other words, Confucian work values

Table 6.3 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family interference at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
GENDER[1]	.04	.02	.02
AGE	.03	.04	.04
Step 2:			
QW	--	.28***	.28***
OC	--	.09	.08
WRCON	--	.29***	.31***
WHOURS	--	.17***	.17***
CVALUECGF	--	.05	.05
CVALUELEA	--	.00	.00
Step 3:			
QW x CVALUECGF	--	--	.04
OC x CVALUECGF	--	--	.03
WRCON x CVALUECGF	--	--	-.10*
WHOURS x CVALUECGF	--	--	-.01
QW x CVALUELEA	--	--	.01
OC x CVALUELEA	--	--	-.07
WRCON x CVALUELEA	--	--	.01
WHOURS x CVALUELEA	--	--	-.01
Adjusted R^2	.00	.34	.35
Adjusted R^2 Change	--	.34	.01
F	.51	32.10***	16.46***
df	2,462	8,456	16,448

Note.[1] Male = 0, Female = 1, QW = Quantitative Workload, OC = Organizational Constraints, WRCON = Work-Role Conflict, WHOURS = Total Working Hours per Week, CVALUECGF = Confucian work values (CGF Factor), CVALUELEA = Confucian work values (LEACH Factor)
** p < .05, ** P < .01, *** P < .001*

(CGF Factor) were a significant moderator of the relationship between work-role conflict and work-to-family interference. This moderating effect is further discussed in the next section of this chapter (page 132).

The results also indicated that Confucian work values (CGA and LEACH Factors) were not significant moderators of the relationships between work

demands and work-to-family interference, and between organizational constraints and work-to-family interference. Hypotheses 71 (a) and 73 (a) were not supported. Hypotheses 77, 78 and 79 are longitudinal hypotheses. They are discussed in Chapter 8.

Table 6.4 shows the cross-sectional moderating effects of optimism on family-to-work interference at Time 1. The results (step 3) indicate four interaction terms explained 1% of the variance in family-to-work inference, but only the interaction between of the total working hours in the family per week and optimism was significant. In other words, optimism was a significant moderator

Table 6.4 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work interference at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
GENDER[1]	-.09*	-.11*	-.12**
AGE	.06	.01	.02
Step 2:			
FMWORK	--	.21***	.24***
FRCON	--	.23***	.23***
FHOURS	--	.04	.05.
DEPEND	--	.03	.05
OPT	--	-.05	-.07
Step 3:			
FMWORK x OPT	--	--	.06
FRCON x OPT	--	--	.05
FHOURS x OPT	--	--	-.10*
DEPEND x OPT	--	--	-.07
Adjusted R^2	.01	.18	.19
Adjusted R^2 Change	--	.17	.01
F	3.31*	15.11***	10.65***
df	2,462	7,457	11,453

Note: See footnotes on pate 121

Footnotes for Table 6.4

[1] *Male = 0, Female = 1, FMWORK = Family Workload, FRCON = Family-Role Conflict, FHOURS = Total Working Hours in Family per Week, DEPEND = Total Number of Dependents, OPT = Optimism*

** p < .05, ** p < .01, *** p < .001*

in the relationship between the total working hours in the family per week and family-to-work interference. This moderating effect is discussed in the next section of this chapter (page 133).

However, the remaining interaction terms were not significant. That is, optimism was not a significant moderator of the relationship between family-role conflict and family-to-work interference. Accordingly, hypothesis 64 (a) was not supported. Hypotheses 67 and 68 are longitudinal hypotheses, and they are discussed in Chapter 8.

Tables 6.5, 6.6 and 6.7 present the cross-sectional moderating effects of Confucian work values on work-to-family facilitation variables (Development, Affect and Capital) at Time 1. Table 6.5 (step 3) shows that six interaction terms explained 2% of the variance in the work-to-family facilitation (Development), but only the interaction between work control and Confucian work values (CGF Factor) was significant. In other words, Confucian work values (CGF Factor) were a moderator of the relationship between work control and work-to-family facilitation (Development). Table 6.6 (step 3) indicates that six interaction terms explained 1% of the variance in work-to-family facilitation (Affect), but only the interaction between supervisor support and Confucian work values (CGF Factor) was significant. These results imply that Confucian work values (CGF Factor) were a moderator of the relationship between supervisor support and work-to-family facilitation (Affect). These moderating effects are further discussed in the next section of this chapter (pages 134 and 135).

Table 6.5 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family facilitation (Development) at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	-.10	-.06	-.05
MARITAL[1]	-.13*	-.08	-.06
EDU	-.03	-.03	-.04
CTENURE	.06	.01	.01
OTENURE	.08	.06	.14
POSITION	-.03	.00	-.02
Step 2:			
SFS	--	.27***	.26**
POS	--	.07	.02
WC	--	.06	.05
CVALUECGF	--	.03	.04
CVALUELEA	--	.19***	.20***
Step 3:			
SFS x CVALUECGF	--	--	.07
POS x CVALUECGF	--	--	-.04
WC x CVALUECGF	--	--	.10*
SFS x CVALUELEA	--	--	.05
POS x CVALUELEA	--	--	-.08
WC x CVALUELEA	--	--	-.01
Adjusted R^2	.01	.13	.14
Adjusted R^2 Change	--	.12	.02
F	1.97	6.61***	4.90***
df	6,420	11,415	17,409

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, SFS = Supervisor support, POS = Perceived Organizational support, WC = Work Control, CVALUECGF = Confucian work values (CGF Factor), CVALUELEA = Confucian work values (LEACH Factor)

** p < .05, ** P < .01, *** P < .001*

Table 6.6 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family facilitation (Affect) at Time 1

Predictor Variables	**β**	**β**	**β**
Step 1:			
AGE	.02	.07	.08
MARITAL[1]	-.11	-.06	-.04
EDU	.02	-.03	-.03
CTENURE	.02	-.06	-.07
OTENURE	-.03	.00	-.01
POSITION	01	.04	.04
Step 2:			
SFS	--	.23***	.22***
POS	--	.08	.09
WC	--	.08	.08
CVALUECGF	--	.05	.05
CVALUELEA	--	.20***	.21***
Step 3:			
SFS x CVALUECGF	--	--	.10*
POS x CVALUECGF	--	--	-.04
WC x CVALUECGF	--	--	-.02
SFS x CVALUELEA	--	--	.04
POS x CVALUELEA	--	--	-.05
WC x CVALUELEA	--	--	.01
Adjusted R^2	.00	.13	.14
Adjusted R^2 Change	--	.13	.01
F	1.23	6.81***	4.82***
df	6,420	11,415	17,409

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, SFS = Supervisor support, POS = Perceived Organizational support, WC = Work Control, CVALUECGF = Confucian work values (CGF Factor), CVALUELEA = Confucian work values (LEACH Factor)

** p < .05, ** P < .01, *** P < .001*

Table 6.7 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family facilitation (Capital) at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.03	.09	.08
MARITAL[1]	-.08	-.03	-.03
EDU	-.01	-.02	-.02
CTENURE	.12	.07	.07
OTENURE	.03	-.02	-.03
POSITION	.00	.04	.05
Step 2:			
SFS	--	.21***	.21***
POS	--	.03	.03
WC	--	.20***	.20***
CVALUECGF	--	-.03	-.03
CVALUELEA	--	.20***	.21***
Step 3:			
SFS x CVALUECGF	--	--	.05
POS x CVALUECGF	--	--	-.03
WC x CVALUECGF	--	--	.00
SFS x CVALUELEA	--	--	.04
POS x CVALUELEA	--	--	-.03
WC x CVALUELEA	--	--	-.06
Adjusted R^2	.03	.18	.18
Adjusted R^2 Change	--	.15	.00
F	3.25**	9.74***	6.47***
df	6,420	11,415	17,409

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, SFS = Supervisor support, POS = Perceived Organizational support, WC = Work Control, CVALUECGF = Confucian work values (CGF Factor), CVALUELEA = Confucian work values (LEACH Factor)
** p < .05, ** P < .01, *** P < .001*

Table 6.7 (step 3) indicates that there were no significant interaction terms between supervisor support, perceived organisational support, work control and Confucian work values (CGF and LEACH Factors). These results indicate that Confucian work values (CGF and LEACH Factors) were not significant moderators of the relationships between supervisor support, perceived organisational support, work control and work-to-family facilitation (Capital). As shown in Tables 6.6, 6.7 and 6.8, Confucian work values (CGA and LEACH Factors) were not significant moderators of the relationships between perceived organizational support and work-to-family facilitation. Hypothesis 75 (a) was not supported. Hypotheses 80, 81, and 82 are longitudinal hypotheses, and they are discussed in Chapter 8.

Tables 6.8, 6.9, and 6.10 present the cross-sectional moderating effects of optimism on family-to-work facilitation variables (Development, Affect and Capital) at Time 1. The results showed that there were no significant interaction terms between family support, family control and optimism. These findings indicate that optimism was not a significant moderator of the relationships between family support, family control and family-to-work facilitation. Therefore, hypotheses 65 (a) and 66 (a) were not supported. Hypotheses 69 and 70 are longitudinal hypotheses, and they are discussed in Chapter 8.

Table 6.8 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work facilitation (Development) at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.07	.07	.07
MARITAL[1]	-.08	-.06	-.06
EDU	.01	.00	.00
CTENURE	.04	.02	.02
OTENURE	-.01	-.03	-.03
POSITION	.04	.04	.04
Step 2:			
FMSUPT	--	.11*	.11*
FMCONT	--	.03	.03
OPT	--	.16**	.16**
Step 3:			
FMSUPT x OPT	--	--	.01
FMCONT x OPT	--	--	.00
Adjusted R^2	.01	.03	.03
Adjusted R^2 Change	--	.03	.00
F	1.45	2.91**	2.38**
df	6,420	9,417	11,415

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FMSUPT = Family Support, FMCONT = Family Control, OPT = Optimism

** p < .05, ** P < .01, *** P < .001*

Table 6.9 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work facilitation (Affect) at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	-.07	-.07	-.07
MARITAL[1]	-.19**	-.14**	-.14**
EDU	.12*	.10*	.10*
CTENURE	.17**	.14*	.14*
OTENURE	-.06	-.08	-.08
POSITION	.04	.05	.05
Step 2:			
FMSUPT	--	.13**	.13**
FMCONT	--	.23***	.22***
OPT	--	.21***	.20***
Step 3:			
FMSUPT x OPT	--	--	.01
FMCONT x OPT	--	--	-.07
Adjusted R^2	.04	.17	.17
Adjusted R^2 Change	--	.13	.00
F	4.00**	10.80***	8.99***
df	6,420	9,417	11,415

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FMSUPT = Family Support, FMCONT = Family Control, OPT = Optimism

** p < .05, ** P < .01, *** P < .001*

Table 6.10 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work facilitation (Capital) at Time 1

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.11	12	12
MARITAL[1]	-.07	-.03	-.03
EDU	.02	.01	.01
CTENURE	.03	.00	.00
OTENURE	-.04	-.07	-.07
POSITION	-.01	.00	.00
Step 2:			
FMSUPT	--	.14**	.14**
FMCONT	--	.15**	.14**
OPT	--	.18***	.17**
Step 3:			
FMSUPT x OPT	--	--	-.01
FMCONT x OPT	--	--	-.04
Adjusted R^2	.01	.09	.09
Adjusted R^2 Change	--	.08	.00
F	1.65	5.67***	4.69***
df	6,420	9,417	11,415

Note. [1] *Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FMSUPT = Family Support, FMCONT = Family Control, OPT = Optimism*

** p < .05, ** P < .01, *** P < .001*

6.4 Graphs of Significant Interaction Terms

The significant interaction terms from Table 6.3 (page 121), 6.4 (page 122), 6.5 (page 123) and 6.6 (page 124) were plotted to show their moderating effects. Following Cohen and Cohen's (1983) method, the interactions between low Confucian work values (CGF Factor) (that is, -1 *SD* below the sample mean), high Confucian work values (CGF Factor) (that is, +1 *SD* above the sample mean), low work-role conflict (that is, -1 *SD* above the sample mean) and high work-role conflict (that is, +1 *SD* above the sample mean) were plotted on work-to-family

interference. The same procedure was also used to plot the moderating effect of optimism on the relationship between the total working hours in the family per week and family-to-work interference, and the moderating effect of Confucian work values (CGF Factor) on the relationships between work control and work-to-family facilitation variable (Development), and between supervisor support and work-to-family facilitation variable (Affect).

As suggested by Aiken and West (1991), simple slopes analyses were conducted to further assess the significance of those moderating effects. Statistical programmes for testing two-way interaction effects and simple slopes analysis, provided in the website (http://www.jeremydawson.co.uk/slopes.htm), were used to complete the above analyses.

Figure 6.1 shows that Confucian work values (CGF Factor) buffered the effect of work-role conflict on work-to-family interference. When work-role conflict was low, participants with low and high Confucian work values (CGF Factor) reported similar levels of work-to-family interference. When work-role conflict was high, participants with high Confucian work values (CGF Factor) reported less work-to-family interference than those with lower Confucian work values (CGF Factor). Furthermore, simple slopes analyses also indicated there was a significant difference between the slopes of low Confucian work values (CGF Factor) and high Confucian work values (CGF Factor) (t-value: 2.39, $p < .01$). Confucian work values (CGF Factor), therefore, were a significant moderator of the relationship between work-role conflict and work-to-family interference. Hypothesis 72 (a) was partially supported because the interaction terms of work-role conflict and Confucian work values (LEACH Factor) were not significant in relation to work-to-family interference.

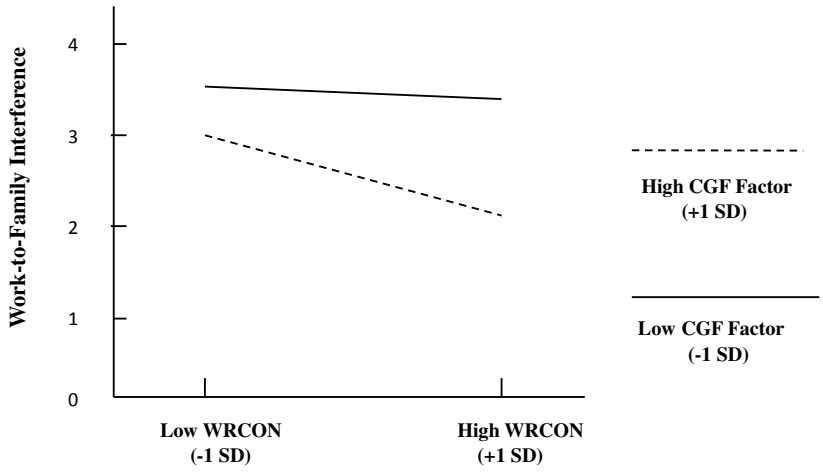


Figure 6.1 Moderating effect of Confucian work values (CGF Factor) on the relationship between work-role conflict (WRCON) and work-to-family interference at Time 1

Figure 6.2 shows that optimism buffered the effect of the total working hours in the family per week on family-to-work interference. When the total working hours in the family per week was low, participants with low and high optimism reported similar levels of family-to-work interference. When the total working hours in the family per week was high, participants with high optimism perceived less family-to-work interference than those with lower optimism. In addition, simple slopes analyses also found there was a significant difference between the slope of low optimism and high optimism (t-value: -8.33, $p < .001$). Accordingly, optimism was a significant moderator of the relationship between total working hours in the family per week and family-to-work interference. Hypothesis 63 (a) was partially supported because the interaction terms between family workload, the total number of dependents and optimism were not significant in relation to family-to-work interference.

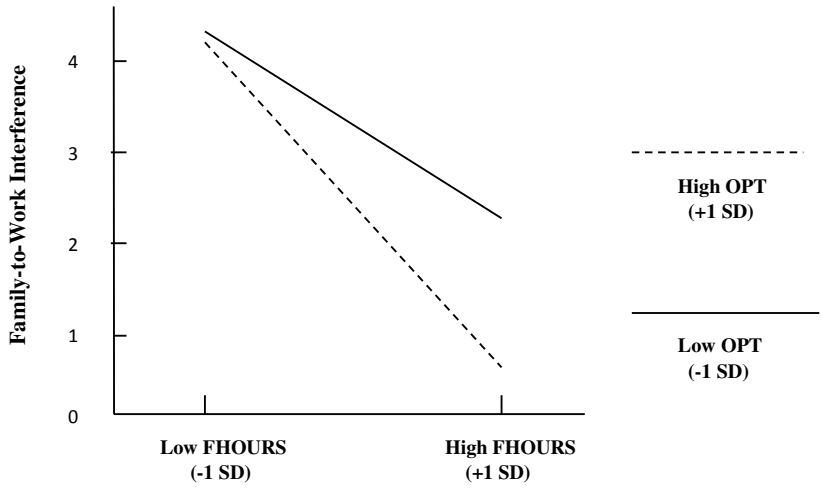


Figure 6.2 Moderating effect of optimism (OPT) on the relationship between total working hours in family per week (FHOURS) and family-to-work interference at Time 1

Figure 6.3 indicates that Confucian work values (CGF Factor) intensified the effect of work control on work-to-family facilitation (Development). When work control was low, participants with low and high Confucian work values (CGF Factor) reported similar levels of work-to-family facilitation (Development). When work control was high, participants with high Confucian work values (CGF Factor), however, perceived higher work-to-family facilitation (Development) than their counterparts with lower Confucian work values (CGF Factor). Simple slopes analyses also indicated that there was a significant difference between low Confucian work values (CGF Factor) and high Confucian work values (CGF Factor) (t-value: 2.08, $p < .05$). Therefore, Confucian work values (CGF Factor) were a significant moderator of the relationship between work control and work-to-family facilitation variable (Development). Hypothesis 76 (a) was partially supported at Time 1 because the interaction terms between work control and Confucian work values (CGF and LEACH Factors) were not significant in relation to work-to-family facilitation variables (Affect and Capital).

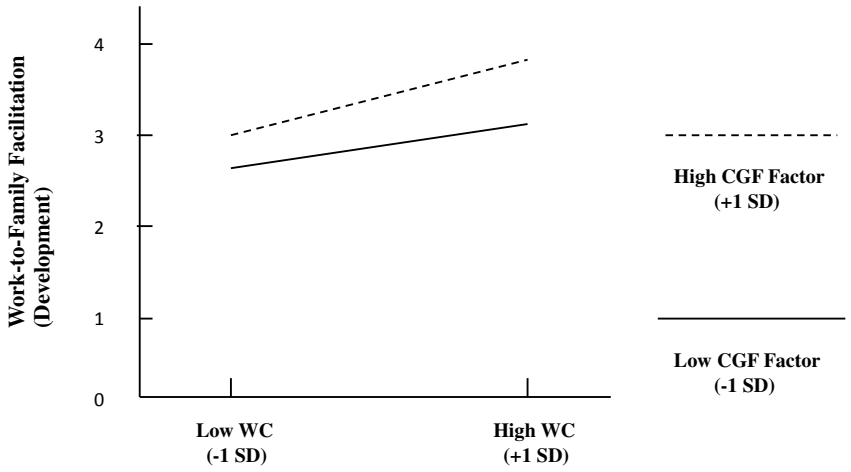


Figure 6.3 Moderating effect of Confucian work values (CGF Factor) on the relationship between work control (WC) and work-to-family facilitation (Development) at Time 1

Figure 6.4 shows that Confucian work values (CGF Factor) intensified the effect of supervisor support on work-to-family facilitation variable (Affect). When supervisor support was low, participants with low and high Confucian work values (CGF Factor) reported similar levels work-to-family facilitation (Affect). When supervisor support was high, participants with high Confucian work values (CGF Factor), however, perceived higher work-to-family facilitation (Affect) than their counterparts with lower Confucian work values (CGF Factor). Simple slopes analyses indicated that there was a significant difference between the slopes of low Confucian work values (CGF Factor) and high Confucian work values (CGF Factor) (t-value: 2.17, $p < .05$). Accordingly, Confucian work values (CGF Factor) were a significant moderator of the relationship between supervisor support and work-to-family facilitation (Affect). Hypothesis 74 (a) was supported because the interaction terms between supervisor support and Confucian work values (CGF and LEACH Factors) were not significant in relation to work-to-family facilitation variables (Development and Capital).

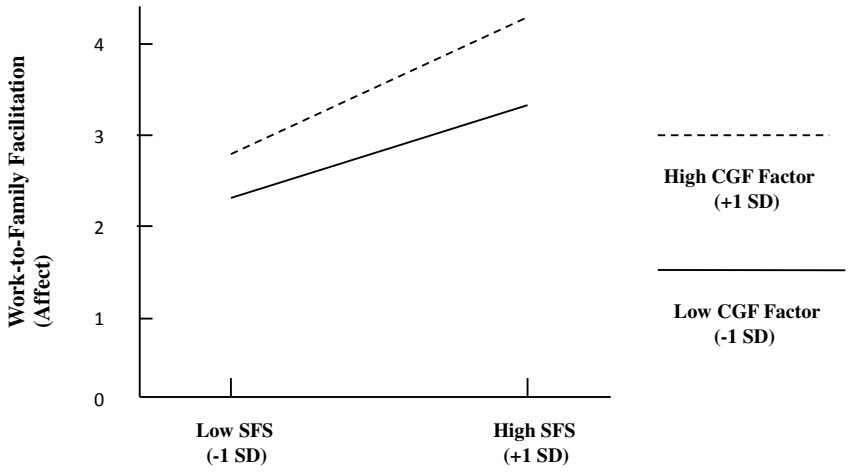


Figure 6.4 Moderating effect of Confucian work values (CGF Factor) on the relationship between supervisor support (SFS) and work-to-family facilitation (Affect) at Time 1

The above results indicate that there were relatively few moderating effects obtained at Time 1 overall. The moderating effect of optimism was obtained once in four analyses, whereas the moderating effects of Confucian work values were found three times in eight analyses.

6.5 Chapter Summary

This chapter has described the results of cross-sectional analyses of the Time 1 data. Table 6.11 summarises the results of hypotheses testing at Time 1. The letter "F" refers to hypotheses which were fully supported. "P" refers to hypotheses which were partially supported, and "N" refers to hypotheses which were not supported. In support of correlational hypotheses at Time 1, work predictors were significantly related to work-to-family interference and facilitation at Time 1. Family predictors were significantly related to family-to-work interference and facilitation at Time 1.

Table 6.11 Summary of hypotheses testing results at Time 1

Hypotheses	Result
1a. Work demands will be positively related to work-to-family interference.	F
2a. Work-role conflict will be positively related to work-to-family interference.	F
3a. Organisational constraints will be positively related to work-to-family interference.	F
7a. Family demands will be positively related to family-to-work interference.	F
8a. Family-role conflict will be positively related to family-to-work interference.	F
11a. Work-to-family interference will be positively associated with physical health symptoms.	F
12a. Family-to-work interference will be positively associated with physical health symptoms.	F
13a. Work-to-family interference will be positively associated with psychological strain.	F
14a. Family-to-work interference will be positively associated with psychological strain.	F
15a. Work-to-family interference will be negatively associated with family satisfaction.	F
21a. Family-to-work interference will be negatively related to work performance.	F
22a. Family-to-work interference will be negatively associated with organisational citizenship behaviours.	F
23a. Family-to-work interference will be positively associated with counterproductive workplace behaviours.	F
27a. Supervisor support will be positively related to work-to-family facilitation.	F
28a. Perceived organisational support will be positively related to work-to-family facilitation.	P
29a. Work control will be positively related to work-to-family facilitation.	F
33a. Family support will be positively associated with family-to-work facilitation.	F
34a. Family control will be positively associated with family-to-work facilitation.	P
37a. Work-to-family facilitation will be negatively related to physical health symptoms.	P
38a. Family-to-work facilitation will be negatively related to physical health symptoms.	N
39a. Work-to-family facilitation will be negatively associated with psychological strain.	F
40a. Family-to-work facilitation will be negatively related to psychological strain.	P
41a. Work-to-family facilitation will be positively associated with family satisfaction.	F
47a. Family-to-work facilitation will be positively related to work performance.	P
48a. Family-to-work facilitation will be positively associated with organisational citizenship behaviours.	F

Table 6.11 (continued)

Hypotheses	Result
49a. Family-to-work facilitation will be negatively related to counterproductive workplace behaviours.	F
63a. The positive relationship between family demands and family-to-work interference will be moderated by optimism. That is, high levels of optimism will reduce the effects of family demands on family-to-work interference.	P
64a. The positive relationship between family-role conflict and family-to-work interference will be moderated by optimism. That is, high levels of optimism will reduce the effects of family-role conflict on family-to-work interference.	N
65a. The positive relationship between family support and family-to-work facilitation will be moderated by optimism. That is, high levels of optimism will increase the effects of family support on family-to-work facilitation.	N
66a. The positive relationship between family control and family-to-work facilitation will be moderated by optimism. That is, high levels of optimism will increase the effects of family support on family-to-work facilitation.	N
71a. The positive relationship between work demands and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work demands on work-to-family interference.	N
72a. The positive relationship between work-role conflict and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work-role conflict on work-to-family interference.	P
73a. The positive relationship between organizational constraints and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of organizational constraints on work-to-family interference.	N
74a.The positive relationship between supervisor support and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of supervisor support on work-to-family facilitation.	P
75a.The positive relationship between perceived organisational support and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of perceived organisational support on work-to-family facilitation.	N
76a.The positive relationship between work control and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of work control on work-to-family facilitation.	P

Note. F = Fully Supported, P = Partially Supported, N = Not Supported

Work-to-family interference and family-to-work interference were significantly associated with poor physical and psychological health, and work-to-family interference was also negatively related to family satisfaction at Time 1. Family-to-work interference was significantly related to decreased work productivity at Time 1.

Work-to-family facilitation was negatively associated with physical symptoms and psychological strain, but positively related to family satisfaction at Time 1. Family-to-work facilitation was negatively associated lower psychological strain and increased work productivity.

There were four moderating effects obtained from twelve analyses (33 %) at Time 1. Optimism was a significant moderator of the relationship between total working hours in family per week and family-to-work interference. Confucian work values (CGF Factor) were a significant moderator of the relationships between work-role conflict and work-to-family interference, work control and work-to-family facilitation (Development), and supervisor support and work-to-family facilitation (Affect). However, optimism was not a moderator between family predictors and family-to-work facilitation. Overall, these findings supported some moderation hypotheses, but they were not consistent. Results at Time 2 are described in Chapter 7.

CHAPTER 7

TIME 2 RESULTS

7.1 Descriptive Statistics

This chapter presents the results of cross-sectional analyses for the data collected at Time 2. It consists of descriptive statistics (e.g. means and standard deviations), correlational analysis and the moderation analysis for optimism and Confucian work values. Cross-sectional hypothesis testing at Time 2 is also described in this chapter.

Table 7.1 presents means, standard deviations, and response scales for all variables at Time 2. Participants reported moderate levels of quantitative workload, and moderately low levels of organizational constraints, family workload, family-role conflict and family support. They also perceived moderate levels of work-role conflict, supervisor support, perceived organizational support, work control and family control. The mean working hours per week among the participants was 47.18 hours (*SD* = 7.35), whereas the mean hours of family work per week was 11.37 hours (*SD* = 10.55). The mean number of dependents was 1.48.

The participants perceived moderate levels of work-to-family interference, and moderately low levels of family-to-work interference. They reported moderate levels of work-to-family facilitation variables (Development, Affect and Capital), and family-to-work facilitation variables (Development, Affect and Capital). Concerning criterion variables, the participants reported moderately low levels of physical symptoms, psychological strain (Anxiety/Depression) and self-rated counterproductive workplace behaviours. Supervisors reported moderately low levels of subordinates' counterproductive workplace behaviours.

Table 7.1 Means, standard deviations, and response scales of all variables at Time 2

Variable	Mean	S.D.	Response Scale
1. Quantitative Workload	2.61	.98	1 – 5
2. Organisational Constraints	2.09	.79	1 – 5
3. Work Control	4.85	1.32	1 – 7
4. Work-Role Conflict	3.99	1.10	1 – 7
5. Supervisor Support	4.53	1.24	1 – 7
6. Perceived Organisational Support	4.57	1.00	1 – 7
7. Family Workload	3.21	1.18	1 – 7
8. Family-Role Conflict	3.38	1.23	1 – 7
9. Family Support	2.19	.70	1 – 5
10.Family Control	4.56	1.05	1 – 7
11.Work-to-Family Interference	3.69	1.42	1 – 7
12.Family-to-Work Interference	2.80	1.17	1 – 7
13.Work-to-Family Facilitation (Development)	4.13	1.27	1 – 7
14. Work-to-Family Facilitation (Affect)	4.03	1.28	1 – 7
15. Work-to-Family Facilitation (Capital)	4.16	1.28	1 – 7
16. Family-to-Work Facilitation (Development)	4.01	1.28	1 – 7
17. Family-to-Work Facilitation (Affect)	4.46	1.27	1 – 7
18. Family-to-Work Facilitation (Capital)	4.20	1.22	1 – 7
19.Family Satisfaction	4.98	1.28	1 – 7
20.Organisational Citizenship Behaviours	4.69	.88	1 – 7
21.Self-Rated Work Performance	4.45	1.30	1 – 7
22. Supervisor-Rated Work Performance	5.00	1.04	1 – 7
23.Physical Symptoms	3.05	.99	1 – 7
24.Psychological Strain (Social Dysfunction)	3.61	.97	1 – 7
25.Psychological Strain (Anxiety/Depression)	2.99	1.09	1 – 7
26. Self-Rated Counterproductive Workplace Behaviours	2.20	.86	1 – 7
27. Supervisor-Rated Counterproductive Workplace Behaviours	2.09	.94	1 – 7
28.Optimism	4.39	.76	1 – 7
29.Confucian Work Values (CGF Factor)	4.47	.79	1 – 7
30. Confucian Work Values (LEACH Factor)	4.36	.82	1 – 7
31. Total Working Hours per Week	47.18	7.35	n.a.
32. Total Working Hours in Family per Week	11.37	10.55	n.a.
33.Total Number of Dependents	1.48	1.18	n.a.

The participants also reported moderately low levels of psychological strain (Social Dysfunction), self-rated work performance, and family satisfaction, and supervisors also reported moderately high levels of work performance for their subordinates. Concerning moderators, the participants reported moderate levels of optimism, and Confucian work values (CGF and LEACH Factors).

7.2 Correlational Analysis

Table 7.2 shows the intercorrelations among main variables at Time 2. As noted on page 40, the term "enrichment" is used to refer to positive interactions generally between work and family domains, whereas the term "facilitation" is used to describe the specific direction of positive interactions between work and family domains when discussing the findings of work-family enrichment.

Quantitative workload, organizational constraints, work-role conflict and the total working hours per week were positively related to work-to-family interference. Therefore, hypotheses 1 (b), 2 (b), and 3 (b) were supported. Family workload and the total number of dependents were positively related to family-to-work interference. Therefore, hypothesis 7 (b) was partially supported because the total working hours in family per week was not significantly associated with family-to-work interference. Family-role conflict was positively associated with family-to-work interference, which supported hypothesis 8 (b).

Supervisor support and perceived organizational support were positively associated with work-to-family facilitation variables (Affect and Capital). Hypotheses 27 (b) and 28 (b) were partially supported because they were not significantly related to work-to-family facilitation (Development). Work control was positively related to work-to-family facilitation variables (Development, Affect and Capital), which supported hypothesis 29 (b).

Table 7.2 Intercorrelations of main variables at Time 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. QW	--													
2. OC	.47***	--												
3. WC	-.16*	-.32***	--											
4. WRCON	.22**	.48***	-.06	--										
5. SFS	-.33***	-.37***	.34***	-.21**	--									
6. POS	-.20**	-.23**	.13	-.32***	.18**	--								
7. FMWORK	.10	.26***	-.04	.23**	-.01	-.12	--							
8. FRCON	.02	.18*	-.08	.27***	.05	-.15*	.56***	--						
9. FMSUPT	.05	.06	-.00	-.07	-.05	-.01	.03	.08	--					
10.FMCONT	-.08	-.26***	.12	-.25***	.14*	.13	-.52***	-.51***	.06	--				
11.WFI	.33***	.31***	-.03	.40***	-.08	-.28***	.09	.07	.06	-.13	--			
12.FWI	.10	.21*	.02	.25***	-.02	-.22**	.22**	.27***	.09	-.27***	.48***	--		
13.WFDEV	-.05	-.07	.18**	.03	.13	.07	.06	.24***	.15*	.03	.08	.12	--	
14.WFAFF	-.11	-.20**	.29***	.02	.23***	.17*	.05	.14*	.09	-.02	-.04	.03	.60***	--

Table 7.2 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
15.WFCAP	-.11	-.21**	.26***	-.12	.22***	.20**	.08	.17*	.03	-.00	-.15*	-.00	.54***	.80***
16.FWDEV	-.01	-.09	.18**	-.15*	.14*	-.04	.03	.18**	.13	.05	-.11	.05	.48***	.59***
17.FWAFF	.07	-.11	.16*	-.08	.15*	.01	-.18**	-.08	.15*	.30***	-.02	-.12	.36***	.46***
18.FWCAP	.01	-.11	.13	-.16*	.12	-.03	-.10	-.03	.17*	.19**	-.04	-.03	.42***	.54***
19.FS	.03	-.10	.20***	-.02	.14*	.01	-.30***	-.27***	.12	.57***	-.15*	-.14*	.14*	.09
20.OCB	.27***	.14*	.12	.15*	.10	-.02	.02	.13	.09	.03	.13	-.15*	.20**	.18*
21.WP	.15*	.04	.03	-.00	-.12	-.06	-.06	-.03	.12	.06	-.14*	-.25***	.01	.02
22.WPS	-.01	-.07	.12	-.03	-.02	.12	-.08	-.02	.11	.30***	-.10	-.21**	.12	.19**
23.PHYS	.20**	.29***	-.10	.29***	-.12	-.15*	.17*	.21**	-.03	-.27***	.35***	.28***	-.09	-.16*
24.PSYSSD	.05	.17*	-.22**	.13	-.29***	-.14	.06	.02	-.11	-.26***	.14*	.10	-.22**	-.21**
25.PSYSAD	.14*	.33***	-.31***	.21**	-.22**	-.17*	.25***	.19**	-.01	-.40***	.29***	.25***	-.15*	-.11
26.CWB	.11	.33***	-.09	.28***	-.18**	-.27***	.18**	.12	.04	-.27***	.19**	.33***	-.06	.00
27.CWBS	.16*	.32***	-.08	.23**	-.12	-.31***	.15*	.05	-.05	-.28***	.22**	.23**	-.13	-.08
28.WHOURS	.34***	.04	.12	.04	.04	-.15*	.03	.11	.13	-.07	.31***	.16*	.01	.04
29.FHOURS	-.02	-.08	-.10	-.02	.00	-.04	.05	.16*	.03	.15*	-.01	.03	.19**	.08
30.DEPEND	.08	.01	-.11	-.02	-.05	-.12	.19**	.18*	.08	.01	-.05	.15*	.08	.11

Table 7.2 (continued)

	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
15.WFCAP	--															
16.FWDEV	.55***	--														
17.FWAFF	.42***	.62***	--													
18.FWCAP	.48***	.66***	.76***	--												
19.FS	.09	.20**	.52***	.37***	--											
20.OCB	.12	.15*	.27***	.20**	.17*	--										
21.WP	.04	.08	.10	.09	-.01	.21**	--									
22.WPS	.22**	.10	.22**	.15*	.26***	.21**	.35***	--								
23.PHYS	-.15*	-.05	-.05	-.10	-.16*	.14*	-.07	-.10	--							
24.PSYSSD	-.17*	-.12	-.28***	-.27***	-.29***	-.34***	-.13	-.21**	.15*	--						
25.PSYSAD	-.15*	-.09	-.19**	-.16*	-.32***	-.05	-.19**	-.25***	.55***	.38***	--					
26.CWB	.00	.07	-.10	-.08	-.20**	-.06	-.02	-.22**	.34***	.19**	.40***	--				
27.CWBS	-.06	.01	-.15*	-.11	-.17*	-.05	-.00	-.40***	.29***	.20**	.43***	.60***	--			
28.WHOURS	-.01	.01	.01	-.06	.05	.12	-.09	-.08	.27***	.08	.26***	.07	.15*	--		
29.FHOURS	.18*	.14*	.17*	.16*	.18*	.06	-.05	.02	.09	-.14*	-.05	-.09	-.15*	-.08	--	
30.DEPEND	.17*	.13	.08	.11	-.04	.01	.13	.15*	-.08	.06	-.01	.05	-.07	-.01	.14*	--

Note: See footnotes on page 182

Footnotes for Table 7.2

QW = Quantitative Workload, OC = Organizational Constraints, WC = Work Control, WRCON = Work-role Conflict, SFS = Supervisor support, POS = Perceived Organizational support, FMWORK = Family Workload, FRCON = Family-role Conflict, FMSUPT = Family Support, FMCONT = Family Control, WFI = Work-to-Family Interference, FWC = Family-to-Work Interference, WFDEV = Work-to-Family Facilitation (Development), WFAFF = Work-to-Family Facilitation (Affect), WFCAP = Work-to-Family Facilitation (Capital), FWDEV = Family-to-Work Facilitation (Development), FWAFF = Family-to-Work Facilitation (Affect), FWCAP = Family-to-Work Facilitation (Capital), FS = Family Satisfaction, OCB = Organizational Citizenship Behaviours, WP = Self-Rated Work Performance, WPS = Supervisor-Rated Work Performance, PHYS = Physical Symptoms, PSYSSD = Psychological Strain (Social Dysfunction), PSYSAD = Psychological Strain (Anxiety/Depression), CWB = Self-Rated Counterproductive Workplace Behaviours, CWBS = Supervisor-Rated Counterproductive Workplace Behaviours, WHOUR = Working Hours per Week, FHOUR =Total Working Hours in Family per Week, DEPT = Total Number of Dependents

** $p < .05$, ** $P < .01$, *** $P < .001$*

Family support and family control were positively associated with family-to-work facilitation variables (Affect and Capital). Therefore, hypotheses 33 (b) and 34 (b) were partially supported because they were not significantly related to family-to-work facilitation (Development).

Work-to-family interference was positively related to physical symptoms, psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression). Therefore, hypotheses 11 (b) and 13 (b) were supported. In addition, work-to-family interference was negatively associated with family satisfaction. Hypothesis 15 (b) was also supported.

Family-to-work interference was positively related to physical symptoms, which supported hypothesis 12 (b). Family-to-work interference was also positively related to psychological strain (Anxiety/Depression). Therefore, hypothesis 14 (b) was partially supported because it was not significantly associated with psychological strain (Social Dysfunction). In addition,

family-to-work interference was positively related to self-rated counterproductive workplace behaviours and supervisor-rated counterproductive workplace behaviours, but negatively related to self-rated work performance and supervisor-rated work performance. These results support hypotheses 21 (b) and 23 (b). Family-to-work interference was also negatively associated with organizational citizenship behaviours, which supported hypothesis 22 (b).

Work-to-family facilitation variables (Affect and Capital) were negatively associated with physical symptoms. Hypothesis 37 (b) was partially supported because work-to-family facilitation (Development) was not significantly related to physical symptoms. Work-to-family facilitation variables (Development, Affect and Capital) were negatively associated with psychological strain (Anxiety/Depression), but only work-to-family facilitation variables (Development and Capital) were also negatively related to psychological strain (Social Dysfunction). Hypothesis 39 (b) was partially supported because work-to-family facilitation (Affect) was not significantly associated with psychological strain (Social Dysfunction). Work-to-family facilitation (Development) was positively related to family satisfaction. Hypothesis 41 (b) was partially supported because work-to-family facilitation variables (Affect and Capital) were not significantly associated with family satisfaction.

Family-to-work facilitation variables (Development, Affect and Capital) were not significantly related to physical symptoms. Hypothesis 38 (b) was therefore not supported. In addition, family-to-work facilitation variables (Affect and Capital) were negatively associated with psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression). Hypothesis 40 (b) was partially supported because family-to-work facilitation (Development) was

not significantly related to psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression).

Self-rated work performance was positively associated with supervisor-rated work performance. Self-rated counterproductive workplace behaviours were also positively related to supervisor-rated counterproductive workplace behaviours. Family-to-work facilitation variables (Development, Affect and Capital) were positively associated with organizational citizenship behaviours, which supported hypothesis 48 (b). Family-to-work facilitation variables (Affect and Capital) were positively related to supervisor-rated work performance.

Therefore, hypothesis 47 (b) was partially supported because family-to-work facilitation (Development) was not significantly associated with supervisor-rated work performance, and also family-to-work facilitation (Development, Affect and Capital) were not significantly related to self-rated work performance. In addition, family-to-work facilitation (Affect) was negatively associated with supervisor-rated counterproductive workplace behaviours. Hypothesis 49 (b) was partially supported because family-to-work facilitation (Development and Capital) were not significantly related to supervisor-rated counterproductive workplace behaviours, and also family-to-work facilitation variables (Development, Affect and Capital) were not significantly related to self-rated counterproductive workplace behaviours. Overall, 50% of my hypotheses were fully supported, whereas 46% of my hypotheses were partially supported by the correlational results at Time 2. The correlational results between Time 1 and Time 2 were also similar generally.

7.3 Analysis of Cross-Sectional Moderating Effects

Similar to Chapter 6, hierarchical regression analyses (Cohen & Cohen, 1983) were conducted to investigate cross-sectional moderating effects of optimism and

Confucian work values between predictor variables and work-family conflict and enrichment while controlling for demographic variables. The procedure was the same as the analyses described in Chapter 6.

Table 7.3 presents the cross-sectional moderating effects of Confucian work values on work-to-family interference at Time 2. The results (step 3) showed that there were no significant interaction terms obtained. They indicate that Confucian work values (CGF and LEACH Factors) were not significant moderators of the relationships between quantitative workload, organizational constraints, work-role conflict, the total working hours per week and work-to-family interference. Therefore, hypotheses 71 (b), 72 (b), and 73 (b) were not supported, which were also similar to the results at Time 1.

Table 7.4 shows the cross-sectional moderating effects of optimism on family-to-work interference at Time 2. The results (step 3) indicate that four interaction terms explained 3% of the variance in family-to-work inference, but only the interaction term of family-role conflict and optimism was significant. In other words, optimism was a significant moderator in the relationship between family-role conflict and family-to-work interference. This moderating effect is discussed in the next section of this chapter (page 158). However, the remaining interaction terms were not significant. That is, optimism was not a significant moderator of the relationship between family workload, the total working hours in the family per week, the total number of dependent and family-to-work interference. Accordingly, hypothesis 63 (b) was not supported. The above findings were also similar to the results at Time 1.

Table 7.3 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family interference at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
GENDER[1]	-.01	.04	.03
AGE	.01	-.01	-.01
Step 2:			
QW	--	.12	.11
OC	--	.13	.14
WRCON	--	.28***	.26***
WHOURS	--	.23**	.23**
CVALUECGF	--	.21**	.21**
CVALUELEA	--	-.05	-.05
Step 3:			
QW x CVALUECGF	--	--	.12
OC x CVALUECGF	--	--	.07
WRCON x CVALUECGF	--	--	-.07
WHOURS x CVALUECGF	--	--	-.08
QW x CVALUELEA	--	--	-.01
OC x CVALUELEA	--	--	-.04
WRCON x CVALUELEA	--	--	-.04
WHOURS x CVALUELEA	--	--	.09
Adjusted R^2	.00	.28	.28
Adjusted R^2 Change	--	.28	.00
F	.03	10.93***	5.95***
Df	2,203	8,197	16,189

Note.[1] Male = 0, Female = 1, QW = Quantitative Workload, OC = Organizational Constraints, WRCON = Work-Role Conflict, WHOURS = Total Working Hours per Week, CVALUECGF = Confucian Work Values (CGF Factor), CVALUELEA = Confucian Work Values (LEACH Factor)
** p < .05, ** P < .01, *** P < .001*

Table 7.4 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work interference at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
GENDER[1]	-.20**	-.17*	-.17*
AGE	.07	.04	.06
Step 2:			
FMWORK	--	.09	.11
FRCON	--	.19*	.19*
FHOURS	--	.00	-.01
DEPEND	--	-.07	-.10
OPT	--	-.08	-.07
Step 3:			
FMWORK x OPT	--	--	-.09
FRCON x OPT	--	--	-.27**
FHOURS x OPT	--	--	.00
DEPEND x OPT	--	--	.06
			.
Adjusted R^2	.05	.08	.11
Adjusted R^2 Change	--	.03	.03
F	4.94**	3.48**	3.35***
Df	2,203	7,198	11,194

Note.[1] Male = 0, Female = 1, FMWORK = Family Workload, FRCON = Family-Role Conflict, FHOURS = Total Working Hours in Family per Week, DEPEND = Total Number of Dependents, OPT = Optimism

** p < .05, ** p < .01, *** p < .001*

Tables 7.5, 7.6 and 7.7 present the cross-sectional moderating effects of Confucian work values on work-to-family facilitation variables (Development, Affect and Capital) at Time 2. The results (step 3) indicated that there were no significant interaction terms between Confucian work values (CGF and LEACH Factors) and supervisor support, and between Confucian work values (CGF and LEACH Factors) and perceived organizational support.

Table 7.5 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family facilitation (Development) at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.13	.15	.12
MARITAL[1]	.07	.10	.11
EDU	-.10	-.13	-.16*
CTENURE	-.01	.00	.00
OTENURE	.11	.07	.08
POSITION	.01	.01	.00
Step 2:			
SFS	--	.05	.08
POS	--	.10	.11
WC	--	.13	.11
CVALUECGF	--	.09	.08
CVALUELEA	--	.13	.12
Step 3:			
SFS x CVALUECGF	--	--	-.01
POS x CVALUECGF	--	--	.02
WC x CVALUECGF	--	--	-.11
SFS x CVALUELEA	--	--	.11
OFS x CVALUELEA	--	--	.03
WC x CVALUELEA	--	--	.02
Adjusted R^2	.03	.07	.07
Adjusted R^2 Change	--	.04	.00
F	1.85	2.58**	1.90*
Df	6,194	11,189	17,183

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, SFS = Supervisor support, POS = Perceived Organizational support, WC = Work Control, CVALUECGF = Confucian Work Values (CGF Factor), CVALUELEA = Confucian Work Values (LEACH Factor)

** p < .05, ** P < .01, *** P < .001*

Table 7.6 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family facilitation (Affect) at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.08	.08	.09
MARITAL[1]	.00	.04	.04
EDU	-.26**	-.29***	-.27**
CTENURE	-.16	-.14	-.13
OTENURE	.11	.07	.08
POSITION	-.08	-.07	-.07
Step 2:			
SFS	--	.12	.12
POS	--	.06	.07
WC	--	.23**	.24**
CVALUECGF	--	-.03	-.03
CVALUELEA	--	.17*	.16*
Step 3:			
SFS x CVALUECGF	--	--	-.01
POS x CVALUECGF	--	--	-.04
WC x CVALUECGF	--	--	.06
SFS x CVALUELEA	--	--	.03
OFS x CVALUELEA	--	--	02
WC x CVALUELEA	--	--	.15*
Adjusted R^2	.07	.16	.17
Adjusted R^2 Change	--	.09	.01
F	3.41**	4.93***	3.19***
Df	6,194	11,189	17,183

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, SFS = Supervisor support, POS = Perceived Organizational support, WC = Work Control, CVALUECGF = Confucian Work Values (CGF Factor), CVALUELEA = Confucian Work Values (LEACH Factor)

** p < .05, ** P < .01, *** P < .001*

Table 7.7 Hierarchical regression analyses for examining the moderating effects of Confucian work values on work-to-family facilitation (Capital) at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	-.03	-.02	-.01
MARITAL[1]	-.01	.03	.03
EDU	-.17*	-.20**	-.17*
CTENURE	.01	.03	.04
OTENURE	.13	.09	.09
POSITION	-.05	-.04	-.03
Step 2:			
SFS	--	.15*	.16*
POS	--	.01	-.01
WC	--	.23**	.25**
CVALUECGF	--	.02	.04
CVALUELEA	--	.19**	.17*
Step 3:			
SFS x CVALUECGF	--	--	.06
POS x CVALUECGF	--	--	-.11
WC x CVALUECGF	--	--	.09
SFS x CVALUELEA	--	--	.00
OFS x CVALUELEA	--	--	.01
WC x CVALUELEA	--	--	.07
Adjusted R^2	.03	.16	.16
Adjusted R^2 Change	--	.13	.00
F	1.99	4.55***	3.18***
Df	6,194	11,189	17,183

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, SFS = Supervisor support, POS = Perceived Organizational support, WC = Work Control, CVALUECGF = Confucian Work Values (CGF Factor), CVALUELEA = Confucian Work Values (LEACH Factor)

** p < .05, ** P < .01, *** P < .001*

Support by the above results, Confucian work values (CGF and LEACH Factors) were not significant moderators of the relationships between supervisor support and work-to-family facilitation variables (Development, Affect and Capital), and between perceived organizational support and work-to-family facilitation variables (Development, Affect and Capital). Hypotheses 74 (b) and 75 (b) were not supported, which were similar to the results at Time 1.

However, results in Table 7.6 (step 3) show that that six interaction terms explained 1% of the variance in the work-to-family facilitation (Development), but only the interaction term of work control and Confucian work values (LEACH Factor) was significant. In other words, Confucian work values (LEACH Factor) were a moderator of the relationship between work control and work-to-family facilitation (Affect). This moderating effect is further discussed in the next section of this chapter (page 160).

Tables 7.8, 7.9, and 7.10 present the cross-sectional moderating effects of optimism on family-to-work facilitation variables (Development, Affect and Capital) at Time 2. The results show that there were no significant interaction terms obtained. They imply that optimism was not a significant moderator of the relationships between family support, family control and family-to-work facilitation. Hypotheses 65 (b) and 66 (b) were not supported. The above results were also similar to the results at Time 1.

Table 7.8 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work facilitation (Development) at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.15	.14	.14
MARITAL[1]	.00	.03	.04
EDU	.00	-.01	-.01
CTENURE	.01	.00	-.01
OTENURE	-.02	-.04	-.04
POSITION	.02	.02	.01
Step 2:			
FMSUPT	--	.09	.10
FMCONT	--	.00	.01
OPT	--	.16*	.17*
Step 3:			
FMSUPT x OPT	--	--	-.08
FMCONT x OPT	--	--	.00
Adjusted R^2	.00	.01	.01
Adjusted R^2 Change	--	.01	.00
F	.06	1.91	1.07
df	6,194	9,191	11,189

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FMSUPT = Family Support, FMCONT = Family Control, OPT = Optimism

** p < .05, ** P < .01, *** P < .001*

Table 7.9 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work facilitation (Affect) at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.09	.07	.07
MARITAL[1]	-.12	-.06	-.06
EDU	.08	.01	.01
CTENURE	-.02	-.04	-.03
OTENURE	.04	.02	.01
POSITION	-.05	-.02	-.03
Step 2:			
FMSUPT	--	.08	.08
FMCONT	--	.21**	.21**
OPT	--	.19**	.18*
Step 3:			
FMSUPT x OPT	--	--	.03
FMCONT x OPT	--	--	-.06
Adjusted R^2	.01	.11	.11
Adjusted R^2 Change	--	.10	.00
F	1.44	3.94***	3.28***
df	6,194	9,191	11,189

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FMSUPT = Family Support, FMCONT = Family Control, OPT = Optimism

** p < .05, ** P < .01, *** P < .001*

Table 7.10 Hierarchical regression analyses for examining the moderating effects of optimism on family-to-work facilitation (Capital) at Time 2

Predictor Variables	***β***	***β***	***β***
Step 1:			
AGE	.13	.11	.11
MARITAL[1]	-.17*	-.12	-.12
EDU	.06	.01	.01
CTENURE	-.02	-.03	-.02
OTENURE	-.01	-.04	-.05
POSITION	.04	.05	.04
Step 2:			
FMSUPT	--	.11	.12
FMCONT	--	.09	.08
OPT	--	.26**	.25**
Step 3:			
FMSUPT x OPT	--	--	.04
FMCONT x OPT	--	--	-.09
Adjusted R^2	.02	.11	.11
Adjusted R^2 Change	--	.09	.00
F	1.61	3.75***	3.20***
df	6,194	9,191	11,189

Note. [1] *Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FMSUPT = Family Support, FMCONT = Family Control, OPT = Optimism*

** p < .05, ** P < .01, *** P < .001*

7.4 Graphs of Significant Interaction Terms

The significant interaction terms from Table 7.4 (page 150) and 7.6 (page 152) were plotted to show their moderating effects. Based on Cohen and Cohen's (1983) method, the interactions between low optimism (that is, -1 *SD* below the sample mean), high optimism (that is, +1 *SD* above the sample mean), low family-role conflict (that is, -1 *SD* below the sample mean) and high family-role conflict (that is, -1 *SD* above the sample mean) were plotted on family-to-work interference. This procedure was also adopted to plot the

moderating effect of Confucian work values (LEACH Factor) between work control and work-to-family facilitation (Affect). Simple slope analyses suggested by Aiken and West (1991) were conducted to assess the significance of those moderating effects. Statistical programmes for testing two-way interaction effects and simple slopes analysis, provided in the website (http://www.jeremydawson.co.uk/slopes.htm), were adopted to complete the above analyses.

Figure 7.1 indicates that optimism buffered the effect of family-role conflict on family-to-work interference. When family-role conflict was low, participants with low and high optimism reported similar levels of family-to-work interference. When family-role conflict was high, participants with high optimism perceived less family-to-work interference than those with low optimism. In addition, simple slopes analyses showed a significant difference between the slopes for low optimism and high optimism (t-value: -2.14, $p < .05$). Accordingly, optimism was a significant moderator of the relationship between family-role conflict and

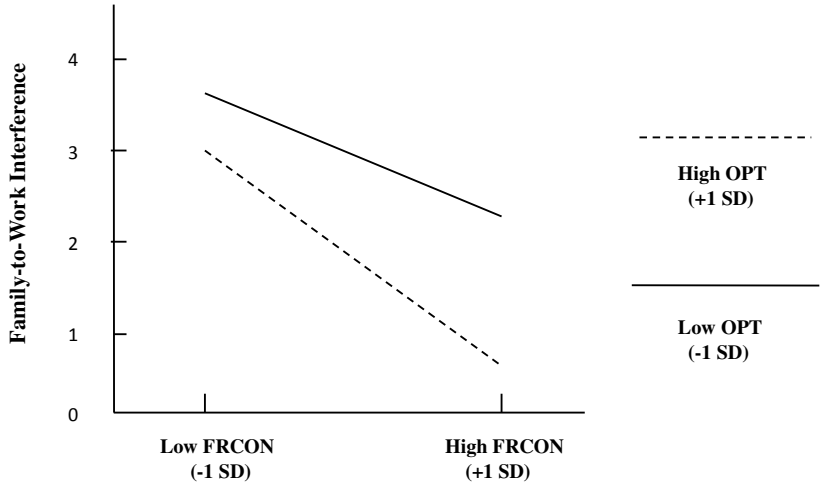


Figure 7.1 Moderating effect of optimism (OPT) on the relationship between family-role conflict (FRCON) and family-to-work interference at Time 2

family-to-work interference. Hypothesis 64 (b) was supported, and the above result was generally similar to the results at Time 1.

Figure 7.2 indicates that Confucian work values (LEACH Factor) intensified the effect of work control on work-to-family facilitation (Affect). When work control was low, participants with low and high Confucian work values (LEACH Factor) reported similar levels of work-to-family facilitation (Affect). When work control was high, participants with high Confucian work values (LEACH Factor) perceived higher work-to-family facilitation (Affect) than their counterparts with low Confucian work values (LEACH Factor). Simple slopes analyses showed a significant difference between the slopes for low Confucian work values (LEACH Factor) and high Confucian work values (LEACH Factor) (t-value: 2.83, $p < .05$). Therefore, Confucian work values (LEACH Factor) were a significant moderator of the relationship between work control and work-to-family facilitation (Affect). Hypothesis 76 (b) was partially supported because Table 7.5 and 7.7 showed that the interaction terms between work control and Confucian work values were not significant in relation to work-to-family facilitation variables (Development and Capital). This was also similar to the results at Time 1.

The above results indicate that there were very few moderating effects obtained at Time 2 overall. The moderating effect of optimism was obtained once in four analyses, and the moderating effect of Confucian work values was found once in eight analyses, which were consistent with the results at Time 1.

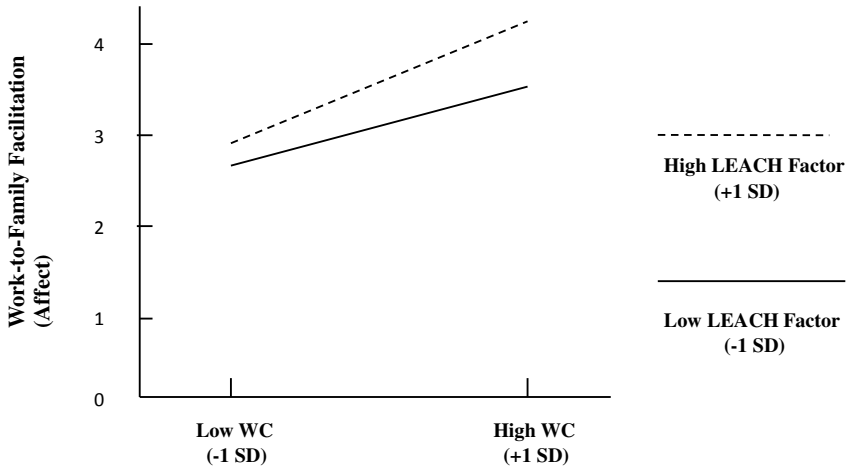


Figure 7.2 Moderating effect of Confucian work values (LEACH Factor) on the relationship between work control (WC) and work-to-family facilitation (Affect) at Time 2

7.5 Chapter Summary

This chapter has described the results of cross-sectional analyses of the Time 2 data. Table 7.11 summarises the results of hypotheses testing at Time 2. The letter "F" refers to hypotheses which were fully supported. "P" refers to hypotheses which were partially supported, and "N" refers to hypotheses which were not supported. In support of my correlational hypotheses, work predictors were significantly related to work-to-family interference and facilitation at Time 2. Family predictors were significantly related family-to-work interference and facilitation at Time 2.

Work-to-family interference and family-to-work interference were significantly associated with poor physical and psychological health, and work-to-family interference was also negatively related to family satisfaction at Time 2. Family-to-work interference was significantly associated with lower work productivity at Time 2.

Table 7.11 Summary of hypotheses testing results at Time 2

Hypotheses	Result
1b. Work demands will be positively related to work-to-family interference.	F
2b. Work-role conflict will be positively related to work-to-family interference.	F
3b. Organisational constraints will be positively related to work-to-family interference.	F
7b. Family demands will be positively related to family-to-work interference.	P
8b. Family-role conflict will be positively related to family-to-work interference.	F
11b. Work-to-family interference will be positively associated with physical health symptoms.	F
12b. Family-to-work interference will be positively associated with physical health symptoms.	F
13b. Work-to-family interference will be positively associated with psychological strain.	F
14b. Family-to-work interference will be positively associated with psychological strain.	P
15b. Work-to-family interference will be negatively associated with family satisfaction.	F
21b. Family-to-work interference will be negatively related to work performance.	F
22b. Family-to-work interference will be negatively associated with organisational citizenship behaviours.	F
23b. Family-to-work interference will be positively associated with counterproductive workplace behaviours.	F
27b. Supervisor support will be positively related to work-to-family facilitation.	P
28b. Perceived organisational support will be positively related to work-to-family facilitation.	P
29b. Work control will be positively related to work-to-family facilitation.	F
33b. Family support will be positively associated with family-to-work facilitation.	P
34b. Family control will be positively associated with family-to-work facilitation.	P
37b. Work-to-family facilitation will be negatively related to physical health symptoms.	P
38b. Family-to-work facilitation will be negatively related to physical health symptoms.	N
39b. Work-to-family facilitation will be negatively associated with psychological strain.	P
40b. Family-to-work facilitation will be negatively related to psychological strain.	P
41b. Work-to-family facilitation will be positively associated with family satisfaction.	P
47b. Family-to-work facilitation will be positively related to work performance.	P
48b. Family-to-work facilitation will be positively associated with organisational citizenship behaviours.	F

Table 7.11 (continued)

Hypotheses	Result
49b. Family-to-work facilitation will be negatively related to counterproductive workplace behaviours.	P
63b. The positive relationship between family demands and family-to-work interference will be moderated by optimism. That is, high levels of optimism will reduce the effects of family demands on family-to-work interference.	N
64b. The positive relationship between family-role conflict and family-to-work interference will be moderated by optimism. That is, high levels of optimism will reduce the effects of family-role conflict on family-to-work interference.	F
65b. The positive relationship between family support and family-to-work facilitation will be moderated by optimism. That is, high levels of optimism will increase the effects of family support on family-to-work facilitation.	N
66b. The positive relationship between family control and family-to-work facilitation will be moderated by optimism. That is, high levels of optimism will increase the effects of family support on family-to-work facilitation.	N
71b. The positive relationship between work demands and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work demands on work-to-family interference.	N
72b. The positive relationship between work-role conflict and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of work-role conflict on work-to-family interference.	N
73b. The positive relationship between organizational constraints and work-to-family interference will be moderated by Confucian work values. That is, high levels of Confucian work values will reduce the effects of organizational constraints on work-to-family interference.	N
74b.The positive relationship between supervisor support and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of supervisor support on work-to-family facilitation.	N
75b.The positive relationship between perceived organisational support and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of perceived organisational support on work-to-family facilitation.	N
76b.The positive relationship between work control and work-to-family facilitation will be moderated by Confucian work values. That is, high levels of Confucian work values will increase the effects of work control on work-to-family facilitation.	P

Note. F = Fully Supported, P = Partially Supported, N = Not Supported

Work-to-family facilitation was negatively associated with physical symptoms and psychological strain, but positively related to family satisfaction at Time 2. Family-to-work facilitation was negatively associated lower psychological strain and increased work productivity at Time 2.

Overall, there were two moderating effects obtained from twelve analyses (17 %) at Time 2. Optimism was a significant moderator of the relationship between family-role conflict and family-to-work interference. Confucian work values (LEACH Factor) were a significant moderator of the relationship between work control and work-to-family facilitation. However, the moderating effects of optimism in the relationships between family predictors and family-to-work facilitation were not supported. Confucian work values were also not a significant moderator of the relationships between work predictors and work-to-family interference. Results of longitudinal analyses are described in Chapter 8.

CHAPTER 8

LONGITUDINAL RESULTS

8.1 Descriptive Statistics

This chapter presents the longitudinal analysis of the data collected at Time 1 and Time 2. It includes the descriptive statistics (means and standard deviations), t-tests for comparing means of main variables between Time 1 and Time 2, longitudinal correlational analysis, the longitudinal mediating analysis among work-family conflict and enrichment, and the longitudinal moderating analysis of optimism and Confucian work values.

Table 8.1 presents means, standard deviations and t-tests of main variables at Time 1 and Time 2. Paired-sample t-tests indicated that mean scores of quantitative workload, the total number of working hours per week and psychological strain (Social Dysfunction) at Time 2 were significant by higher than Time 1. No other variables showed significant differences across time.

8.2 Longitudinal Correlational Analysis

Table 8.2 shows the longitudinal intercorrelations between predictor variables, work-family conflict and enrichment, and criterion variables.

Quantitative workload, organizational constraints, work-role conflict and the total working hours per week at Time 1 were positively related to work-to-family interference at Time 2, which supported hypotheses 4, 5 and 6. The number of dependents at Time 1 was positively related to family-to-work interference at Time 2. Hypothesis 9 was partially supported because family workload and the total working hours in family per week at Time 1 were not significantly associated with family-to-work interference at Time 2. Family-role conflict at Time 1 was significantly related to family-to-work, which supported hypothesis 10.

Table 8.1 Means, standard deviations, and t-tests of main variables at Time 1 and Time 2

Variable	Time 1		Time 2		t-value
	Mean	S.D.	Mean	S.D.	
1. Quantitative Workload	2.43	.93	2.61	.98	-2.21*
2. Organizational Constraints	2.04	.81	2.09	.79	-.81
3. Work Control	4.87	1.34	4.85	1.32	.14
4. Work-Role Conflict	4.05	1.12	3.99	1.10	.68
5. Supervisor Support	4.41	1.35	4.53	1.24	-.12
6. Perceived Organisational Support	4.60	1.05	4.57	1.00	.49
7. Family Workload	3.10	1.27	3.21	1.18	-1.17
8. Family-Role Conflict	3.29	1.27	3.38	1.23	-1.02
9. Family Support	2.22	.74	2.19	.70	.55
10.Family Control	4.71	1.13	4.56	1.05	1.81
11.Work-to-Family Interference	3.55	1.49	3.69	1.42	-1.16
12.Family-to-Work Interference	2.69	1.14	2.80	1.17	-1.25
13.Work-to-Family Facilitation (Development)	4.18	1.41	4.13	1.27	.47
14.Work-to-Family Facilitation (Affect)	3.85	1.53	4.03	1.28	-1.41
15.Work-to-Family Facilitation (Capital)	4.11	1.45	4.16	1.28	-.32
16.Family-to-Work Facilitation (Development)	3.94	1.31	4.01	1.28	-.53
17.Family-to-Work Facilitation (Affect)	4.45	1.33	4.46	1.27	.02
18.Family-to-Work Facilitation (Capital)	4.14	1.27	4.20	1.22	-.49
19.Family Satisfaction	5.11	1.21	4.98	1.28	1.39
20.Organizational Citizenship Behaviours	4.70	.86	4.69	.88	.34
21.Work Performance (Self-rated)	4.45	1.36	4.45	1.30	.00
22.Physical Symptoms	2.97	.98	3.05	.99	-1.13
23.Psychological Strain (Social Dysfunction)	3.44	.99	3.61	.97	-2.00*
24. Psychological Strain (Anxiety/ Depression)	2.98	1.06	2.99	1.09	-.13
25.Counterproductive Workplace Behaviours	2.12	.72	2.20	.86	-1.14
26.Optimism	4.36	.71	4.39	.76	1.14
27.Confucian Work Values (CGF Factor)	4.52	.72	4.47	.79	1.01
28. Confucian Work Values (LEACH Factor)	4.43	.74	4.36	.82	-.41
29. Total Working Hours per Week	45.93	6.66	47.18	7.35	-2.42*
30. Total Working Hours in Family per Week	11.52	11.37	11.37	10.55	.24
31.Total Number of Dependents	1.32	1.18	1.48	1.18	-1.74

Table 8.2 Correlations among main variables at Time 1 and Time 2

	Time 1												
Time 2	QW	OC	WC	WRCON	SFS	POS	FMWORK	FRCON	FMSUPT	FMCONT	WFI	FWI	WFDEV
1. WFI	.23**	.20**	-.14*	.25***	-.02	-.11	.11	.03	.08	-.07	.42***	.26***	-.02
2. FWI	.09	.13	.01	.20**	.02	-.09	.13	.24***	.04	-.04	.25***	.39***	.10
3. WFDEV	.02	-.02	.24***	.05	.08	.03	.05	.13*	.10	.09	-.03	.00	.36***
4. WFAFF	-.06	-.10	.25***	-.16*	.15*	.10	.09	.11	.16*	.12	-.08	-.01	.25***
5. WFCAP	.03	-.04	.24***	-.02	.18*	.16*	.16*	.18*	.12	.02	-.03	.09	.30***
6. FWDEV	.08	-.02	.10	.04	.01	-.02	.13	.20***	.10	.01	.00	.01	.17*
7. FWAFF	.04	-.01	.15*	.05	.13	.02	.07	.05	.16*	.27***	.02	.03	.23**
8. FWCAP	.04	.00	.11	.00	.08	-.03	.02	.09	.13	.15*	-.03	-.04	.26***
9. FS	.01	-.02	.14*	.06	.10	.00	-.13	-.01	.11	.24**	-.16*	.02	.15*
10.OCB	.17*	.10	.05	.10	.03	-.02	.07	.08	.09	.00	.13	-.15*	.20**
11.WP	.19**	.06	.00	-.02	-.07	-.09	-.07	.00	.08	.02	-.06	-.26***	-.12
12.WPS	.08	.02	.14*	-.03	.07	.00	-.11	.03	.10	.14*	-.04	-.08	-.03
13.PHYS	.12	.14*	-.09	.07	-.07	-.13	.16*	-.23**	.12	-.22**	.20**	.15*	-.06
14.PSYSSD	-.01	.05	-.13	.10	-.21**	-.15*	.00	-.08	-.07	-.25**	.07	.01	-.12
15.PSYSAD	.00	.10	-.22**	.03	-.07	-.05	.19**	.02	.02	-.26***	.15*	.14*	-.05
16.CWB	.04	.09	-.12	.06	-.13	-.12	.18*	.10	-.09	-.07	.10	.16*	-.08
17.CWBS	.06	.09	-.18**	.04	-.10	-.10	.16*	.07	-.11	-.05	.09	.02	-.05

Table 8.2 (continued)

	Time 1							
Time 2	WFAFF	WFCAP	FWDEV	FWAFF	FWCAP	WHOURS	FHOURS	DEPEND
1. WFI	-.10	.04	-.02	.17	.04	.20**	.08	.07
2. FWI	.06	.15*	.06	.10	.00	.11	.10	.15*
3. WFDEV	.19**	.28***	.19**	.09	.17*	-.01	.20**	.11
4. WFAFF	.28***	.26***	.18**	.16*	.24**	-.03	.19**	.13
5. WFCAP	.32***	.38***	.21**	.16*	.25***	-.01	.18*	.14*
6. FWDEV	.14*	.17*	.26***	.18*	.23**	.04	.09	.11
7. FWAFF	.21**	.18*	.15*	.24***	.22**	-.04	.10	.04
8. FWCAP	.25***	.28***	.24***	.26***	.36***	-.05	.19**	.07
9. FS	.08	.08	.20**	.51***	.36***	.04	.09	-.03
10.OCB	.11	.17*	.15*	.27***	.20**	.19*	.01	.03
11.WP	-.15*	-.11	.08	.14*	.10	-.09	.04	-.03
12.WPS	.06	.08	.10	.21**	.14*	-.13	.08	.08
13.PHYS	-.17*	-.16*	-.05	-.05	-.10	.18*	.04	.05
14.PSYSSD	-.10	-.18**	-.10	-.17*	-.15*	.08	-.07	.05
15.PSYSAD	-.16*	-.15*	-.08	-.16*	-.08	.20**	.05	.04
16.CWB	-.2**	-.16*	-.11	-.16*	-.10	.12	-.02	.07
17.CWBS	-.12	-.16*	.00	-.15*	-.08	.15*	-.15*	-.01

Note. QW = Quantitative Workload, OC = Organizational Constraints, WC = Work Control, WRCON = Work-role Conflict, SFS = Supervisor support, POS = Perceived Organizational Support, FMWORK= Family Workload, FRCON = Family-Role Conflict, FMSUPT = Family Support, FMCONT = Family Control, WFI = Work-to-Family Interference, FWI = Family-to-Work Interference, WFDEV = Work-to-Family Facilitation (Development), WFAFF = Work-to-Family Facilitation (Affect), WFCAP = Work-to-Family Facilitation (Capital), FWDEV = Family-to-Work Facilitation (Development), FWAFF = Family-to-Work Facilitation (Affect), FWCAP = Family-to-Work Facilitation (Capital), FS = Family Satisfaction, OCB = Organizational Citizenship Behaviours, WP = Self-Rated Work Performance, WPS = Supervisor-Rated Work Performance PHYS = Physical Symptoms, PSYSSD = Psychological Strain (Social Dysfunction), PSYSAD = Psychological Strain (Anxiety/Depression), CWB = Self-Rated Counterproductive Workplace Behaviours, CWBS = Supervisor-Rated Counterproductive Workplace Behaviours, WHOURS = Total Working Hours per Week, FHOURS = Total Working Hours in Family per Week, DEPEND = Total Number of Dependents

** p < .05, ** p < .01, *** p < .001*

Supervisor support at Time 1 was positively associated with work-to-family facilitation variables (Affect and Capital). Hypothesis 30 was therefore partially supported because supervisor support was not significantly related to work-to-family facilitation (Development) at Time 2. Perceived organizational support at Time 1 was significantly related to work-to-family facilitation (Capital), which also partially supported hypothesis 31 because it was not significantly associated with work-to-family facilitation variables (Development and Affect) at Time 2. Work control at Time 1 was positively associated with work-to-family facilitation variables (Development, Affect and Capital) at Time 2, which supported hypothesis 32.

Family support at Time 1 was positively related to family-to-work facilitation (Affect), but not significantly associated with family-to-work facilitation variable (Development and Capital) at Time 2. These findings partially supported hypothesis 35. Family control was positively associated with family-to-work facilitation (Affect and Capital), but not significantly related to family-to-work facilitation (Development) Time 2. Hypothesis 36 was partially supported.

Work-to-family interference at Time 1 was positively related to physical symptoms, but negatively associated with family satisfaction at Time 2. Hypotheses 16 and 20 were supported. Work-to-family interference at Time 1 was also positively associated with psychological strain (Anxiety/Depression), but not significantly related to psychological strain (Social Dysfunction) at Time 2. These findings partially supported hypothesis 18.

Family-to-work interference at Time 1 was positively related to physical symptoms. Therefore, hypothesis 17 was supported. Family-to-work interference at Time 1 was also positively associated with psychological strain (Anxiety/Depression), but not significantly associated with psychological strain

(Social Dysfunction) at Time 2. These findings also partially supported hypothesis 19.

Concerning work outcomes, family-to-work interference at Time 1 was negatively related to organizational citizenship behaviours at Time 2, which supported hypothesis 25. Family-to-work interference at Time 1 was negatively associated with self-rated work performance, but not significantly related to supervisor-rated work performance at Time 2. These findings partially supported hypothesis 24. In addition, family-to-work interference at Time 1 was positively related to self-rated counterproductive workplace behaviours, but not significantly associated with supervisor-rated counterproductive workplace behaviours. These results also partially support hypothesis 26.

Work-to-family facilitation variables (Affect and Capital) at Time 1 were negatively associated with physical symptoms at Time 2. Hypothesis 42 was partially supported because work-to-family facilitation (Development) at Time 1 was not significantly related to physical symptoms at Time 2. Work-to-family facilitation (Capital) at Time 1 was negatively related to psychological strain (Social Dysfunction) at Time 2, whereas work-to-family facilitation variables (Affect and Capital) at Time 1 were negatively associated with psychological strain (Anxiety/Depression) at Time 2. Therefore, hypothesis 44 was partially supported because work-to-family facilitation (Development) at Time 1 was not significantly related to psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression) at Time 2. Furthermore, work-to-family facilitation (Development) at Time 1 was positively related to family satisfaction at Time 2. Hypothesis 46 was partially supported because work-to-family facilitation variables (Affect and Capital) at Time 1 were not significantly related to family satisfaction at Time 2.

Family-to-work facilitation variables (Development, Affect and Capital) at Time 1 were not significantly associated with physical symptoms at Time 2. Hypothesis 43 was not supported. Family-to-work facilitation variables (Affect and Capital) at Time 1 were negatively related to psychological strain (Social Dysfunction) at Time 2, and family-to-work facilitation (Affect) at Time 1 was negatively associated with psychological strain (Anxiety/Depression) at Time 2. Hypothesis 45 was partially support because family-to-work facilitation (Development) at Time 1 was not significantly related to psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression) at Time 2.

Focusing on work outcomes, family-to-work facilitation variables (Development, Affect and Capital) at Time 1 were also positively associated with organisational citizenship behaviours at Time 2, which supported hypothesis 51. Family-to-work facilitation (Affect) at Time 1 was positively associated with self-rated work performance at Time 2, and family-to-work facilitation variables (Affect and Capital) at Time 1 were also positively related to supervisor-rated work performance at Time 2. The above results partially support hypothesis 50 because family-to-work facilitation (Development) at Time 1 was not significantly related to self-rated work performance and supervisor-rated work performance at Time 2. Furthermore, family-to-work facilitation (Affect) at Time 1 was negatively related to self-rated counterproductive workplace behaviours and supervisor-rated counterproductive workplace behaviours at Time 2. Therefore, hypothesis 52 was partially supported because family-to-work facilitation variables (Development and Capital) at Time 1 were not significantly associated with self-rated counterproductive workplace behaviours and supervisor-rated counterproductive workplace behaviours at Time 2. Overall, 38% of my

hypotheses were fully supported, whereas 58% of my hypotheses were partially supported by the longitudinal correlational results.

8.3 Analysis of Longitudinal Mediating Effects

Longitudinal mediating effects of work-family conflict and enrichment between predictor variables at Time 1 and criterion variables at Time 2 were investigated in the present study, and the autoregressive model recommended by Cole and Maxwell (2003) was adopted in the analyses. This model allows the researcher to assess whether or not predictor variables contribute significantly to criterion variables over time in a two-wave panel design study (Cole & Maxwell, 2003). As shown in Figure 4.1 (page 98), the effects of predictor variables from work and family domains at Time 1 on mediator variables (work-family conflict and enrichment) at Time 2 were assessed by controlling for those mediator variables at Time 1, and the effects of mediator variables at Time 2 on criterion variables in personal, family, and work domains at Time 2 were examined by controlling for those criterion variables at Time 1.

The goodness of fit statistics for the overall longitudinal mediation models in both work and family domains were examined. As recommended by Kline, Fan and Preacher (2006), a separate model for each mediator was also assessed because AMOS does not provide the significance test for multiple mediators.

8.3.1 Longitudinal Mediating Effects in the Work Domain

Overall Longitudinal Mediation Model in the Work Domain (Model A)

The proposed overall longitudinal mediation model of work-family conflict and enrichment in the work domain (see Figure 8.1) yielded unacceptable fit statistics ($\chi 2 = 5152.68$, df = 2877, $\chi 2/df = 1.79$, RMSEA = .06, SRMR = .11, GFI = .85). The overall longitudinal mediation model was therefore modified according to the modification indices.

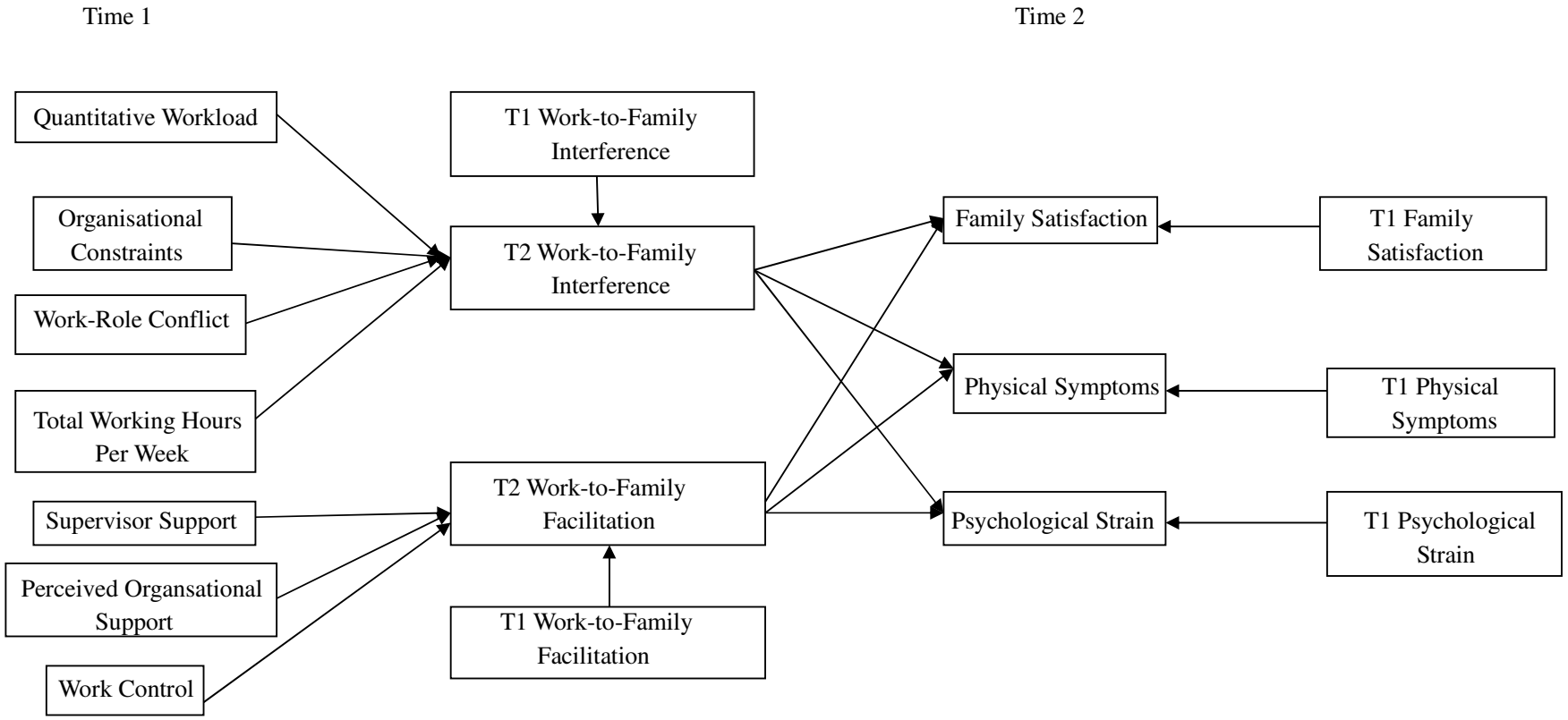


Figure 8.1 Overall longitudinal mediation model of work-family conflict and enrichment in the work domain (Model A)

The modification indices suggested that adding direct paths from the total working hours per week at Time 1 to physical symptoms and psychological strain (Anxiety/Depression) at Time 2, and from supervisor support at Time 1 to psychological strain (Social Dysfunction) at Time 2 would significantly improve the fit statistics of the model. Previous studies (e.g. Kiani & Khodabkhsh, 2013; Wong 2004) showed that the total working hours per weeks and supervisor support were significantly associated with physical and psychological health.

The modification indices indicated that deleting direct paths from work predictors (that is, quantitative workload, organisational constraints and the total number of working hours per week) at Time 1 to work-to-family interference at Time 2 would also improve the fit statistics of the model. These modifications were supported by related findings (e.g. Wong, 2001) that employees might not necessarily experience negative feelings, although they confronted poor conditions, such as heavy workload in the workplace. In addition, the modification indices showed that deleting direct paths from work predictors (that is, supervisor support and perceived organisational support) to work-to-family facilitation (Development, Affect and Capital) at Time 2 would improve the fit statistics of the model. These changes were supported by other studies (e.g. McNall, Masuda & Nicklin, 2010) that work-family enrichment was decreased when work support could not be permanently sustained.

Table 8.3 indicates that the modified model yielded acceptable fit statistics ($\chi 2$ = 3066.84, df = 1915, $\chi 2$/df = 1.60, RMSEA = .05, SRMR = .07, GFI = .90), and the Akaike Information Criterion value (3296.84) for the modified model was also smaller than the initial model (5387.68). These indices support that quantitative workload, organisational constraints and perceived organizational support at Time 1 were removed from the modified model. In addition, Table 8.3

Table 8.4 Path coefficients for the modified overall longitudinal mediation model of work-family conflict and enrichment in the work domain

Work-to-Family Interference		**Work-to-Family Facilitation (Development)**		**Work-to-Family Facilitation (Affect)**		**Work-to-Family Facilitation (Capital)**	
Predictor Variable → Criterion Variable	Standardised Parameter Estimates	Predictor Variable → Criterion Variable	Standardised Parameter Estimates	Predictor Variable → Criterion Variable	Standardised Parameter Estimates	Predictor Variable → Criterion Variable	Standardised Parameter Estimates
WRCON1→WFI	.20*	WC1→WFDEV	.16*	WC1→WFAFF	.22*	WC1→WFCAP	.21*
WHOURS1→PHYS	.13*	SFS1→PSYSAD	-.17*	SFS1→PSYSSD	-.17*	SFS1→PSYSSD	-.17*
WHOURS1→PSYSAD	.14*	WFDEV→FS	.15*	WFAFF→FS	.05	WFCAP→FS	.08
WFI→FS	-.04	WFDEV→PHYS	-.10	WFAFF→PHYS	-.10	WFCAP→PHYS	-.04
WFI→PHYS	.24**	WFDEV→PSYSSD	-.15*	WFAFF→PSYSSD	-.16*	WFCAP→PSYSSD	-.22*
WFI→PSYSSD	.09	WFDEV→PSYSAD	-.16*	WFAFF→PSYSAD	-.16*	WFCAP→PSYSAD	-.12
WFI→PSYSAD	.26**	WFDEV1→WFDEV	.34***	WFAFF1→WFAFF	.33***	WFCAP1→WFCAP	.37***
WFI1→WFI	.41***	FS1→FS	.40***	FS1→FS	.40***	FS1→FS	.40***
FS1→FS	.40***	PHYS1→PHYS	.35***	PHYS1→PHYS	.35***	PHYS1→PHYS	.35***
PHYS1→PHYS	.35***	PSYSSD1→PSYSSD	.38***	PSYSSD1→PSYSSD	.38***	PSYSSD1→PSYSSD	.38***
PSYSSD1→PSYSSD	.38***	PSYSAD1→PSYSAD	.36***	PSYSAD1→PSYSAD	.36***	PSYSAD1→PSYSAD	.36***
PSYSAD1→PSYSAD	.36***						

Note. WRCON1 = Work-Role Conflict at Time 1, WHOURS1 = Total Working Hours per Week at Time 1, SFS1 = Supervisor Support at Time 1, WC1 = Work Control at Time 1, WFI1 = Work-to-Family Interference at Time 1, WFI = Work-to-Family Interference at Time 2, WFDEV1 = Work-to-Family Facilitation (Development) at Time 1, WFDEV = Work-to-Family Facilitation (Development) at Time 2, WFAFF1 = Work-to-Family Facilitation (Affect) at Time 1, WFAFF = Work-to-Family Facilitation (Affect) at Time 2, WFCAP1 = Work-to-Family Facilitation (Capital) at Time 1, WFCAP = Work-to-Family Facilitation (Capital) at Time 2, FS1 = Family Satisfaction at Time 1, FS = Family Satisfaction at Time 2, PHYS1 = Physical Symptoms at Time 1, PHYS = Physical Symptoms at Time 2, PSYSSD1 = Psychological Strains (Social Dysfunction) at Time 1, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2, PSYSAD1 = Psychological Strains (Anxiety/Depression) at Time 1, PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2

** $p < .05$, ** $p < .01$, *** $p < .001$*

also indicate that work-to-family interference and facilitation were significant mediators in the present study.

As mentioned earlier, AMOS cannot provide significance tests for multiple mediators. In order to examine specific longitudinal mediating effects, the overall longitudinal mediation model of work-family conflict and enrichment in the work domain was divided into four separate sub-models supported by the recommendation of Kline et al. (2006). Each of the sub-models represented a specific mediator between predictor variables and criterion variables in the work domain. Model A1 tested the longitudinal mediating effects of work-to-family interference. Model A2 examined the longitudinal mediating effects of work-to-family facilitation (Development). Model A3 tested the longitudinal mediating effects of work-to-family facilitation (Affect), and Model A4 examined the longitudinal mediating effects of work-to-family facilitation (Capital).

Longitudinal Mediating Effects of Work-to-Family Interference (Model A1)

The proposed longitudinal mediation model of work-to-family interference (see Figure 8.1, page 172) yielded unacceptable fit statistics ($\chi 2 = 1430.69$, df = 924, $\chi 2/df = 1.55$, RMSEA = .05, SRMR = .11, GFI = .90). This model was therefore modified according to the modification indices.

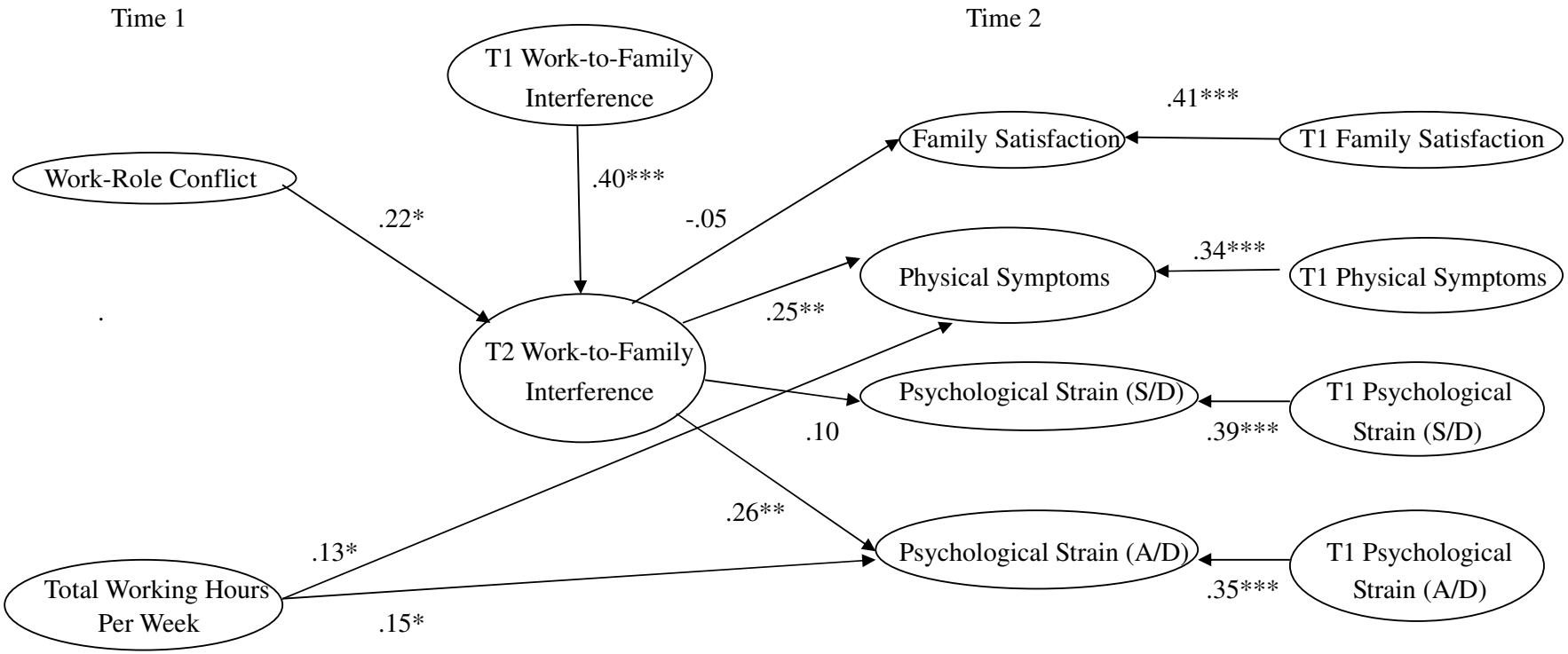
Cross-sectional effects of the total working hours on work-family conflict have been widely studied, and the present study attempted to explore the longitudinal effects of the total working hours in the mediation model of work-family conflict. Therefore, the total working hours per week at Time 1 were included rather than this predictor at Time 2 in the longitudinal mediation analysis. Related findings (e.g. Steinmetz, Frese & Schmidt, 2008) show that working hours were longitudinally related to increased levels of work-family conflict. Prolonged working hours may not allow employees to effectively fulfil in their personal

lives, which in turn may also constrict them from pursuing personal rewards, such as positive self-esteem outside their work (Edwards & Rothbard, 2000; Steinmetz, Frese & Schmidt, 2008).

The modification indices showed that adding direct paths from the total working hours per week at Time 1 to physical symptoms and psychological strain (Anxiety/Depression) at Time 2 would improve the fit statistics of the model. These changes were supported by other findings (e.g. Wong, 2004) that the total working hours per week were significantly associated with increased physical symptoms and psychological strain.

The modification indices also suggested that deleting direct paths from work predictors (that is, quantitative workload, organisational constraints and the total working hours per week) at Time 1 to work-to-family interference at Time 2 would improve the model fit. These changes were supported by previous findings (e.g. Wong, 2001) that Hong Kong employees might not necessarily perceive negative feelings under adverse work conditions because they might obtain positive outcomes, such as extra work-related knowledge and skills, when confronting the above conditions. The above modification significantly improved the fit statistics of the model ($\chi 2$ = 1102.81, df = 719 $\chi 2$/df = 1.53, RMSEA = .05, SRMR = .06, GFI = .91) shown in Figure 8.2. The AIC value (1304.81) for the modified model was also smaller than the initial model (1657.69).

As outlined by Mathieu and Taylor (2006), a precondition of mediation is that predictor variables should be significantly related to the mediator variables. Supported by the modification indices, the direct path from quantitative workload at Time 1 to work-to-family interferences at Time 2 was deleted, and quantitative workload at Time 1 was also not significantly related to other criterion variables at



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.2 Path coefficients for the modified longitudinal mediation model of work-to-family interference (Model A1)

Time 2 in the modified model. Accordingly, quantitative workload at Time 1 was removed from the model. Furthermore, the direct path from the total working hours per week at Time 1 to work-to-family interference at Time 2 was also deleted in the modified model. These results illustrate that work demands at Time 1 were not significantly related to work-to-family interference at Time 2, which in turn did not fulfill the above precondition of mediation. In other words, work-to-family interference was not a significant longitudinal mediator of the relationships between work demands and family satisfaction, physical symptoms and psychological strain. Hypotheses 53 (a, b and c) were not supported.

Based on the modification indices, the direct path from organisational constraints at Time 1 to work-to-family interference at Time 2 was deleted, and organisational constraints at Time 1 was also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, this variable at Time 1 was removed from the model. These results illustrate that organisational constraints at Time 1 were not significantly related to work-to-family interference at Time 2, which in turn did not fulfill the precondition of mediation suggested by Mathieu and Taylor (2006). In other words, work-to-family interference was not a significant longitudinal mediator of the relationships between organisational constraints and family satisfaction, physical symptoms and psychological strain. Hypotheses 55 (a, b and c) were not supported.

The standardised parameter estimates in Figure 8.2 confirm that work-to-family interference was a longitudinal mediator of the relationships between work-role conflict and physical symptoms and psychological strain (Anxiety/Depression). However, work-to-family interference at Time 2 was not significantly related to family satisfaction at Time 2. Hypothesis 54 (c) was therefore not supported. The above results indicate that there were very few

longitudinal mediating effects of work-to-family interference obtained in the present study. Two out of sixteen mediation routes (12.5%) were significant.

In order to assess the specific longitudinal mediating effects of work-to-family interference, the direct, indirect and total effects statistics were examined according to the recommendation of Kline et al. (2006). Table 8.4 shows that work-to-family interference at Time 2 fully mediated the effects of work-role conflict at Time 1 on physical symptoms at Time 2, which supported hypothesis 54 (a). Furthermore, work-to-family interference at Time 2 fully mediated the effects of work-role conflict at Time 1 on psychological strain (Anxiety/Depression) at Time 2. Therefore, hypothesis 54 (b) was partially supported because these mediating effects were significant on psychological strain (Anxiety/Depression), but not on psychological strain (Social Dysfunction).

Table 8.4 Longitudinal mediating effects of work-to-family interference

T1 Predictor Variable → T2 Mediator → T2 Criterion Variable	**Direct Effect**	**Indirect Effect**	**Total Effect**	**Type of Mediation**
WRCON1 → WFI → PHYS	.11	.47**	.59	Full
WRCON1 → WFI → PSYSAD	.05	.48**	.53	Full

Note. WRCON1 = Work-Role Conflict at Time 1, WFI = Work-to-Family Interference at Time 2, PHYS = Physical Symptoms at Time 2, PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2

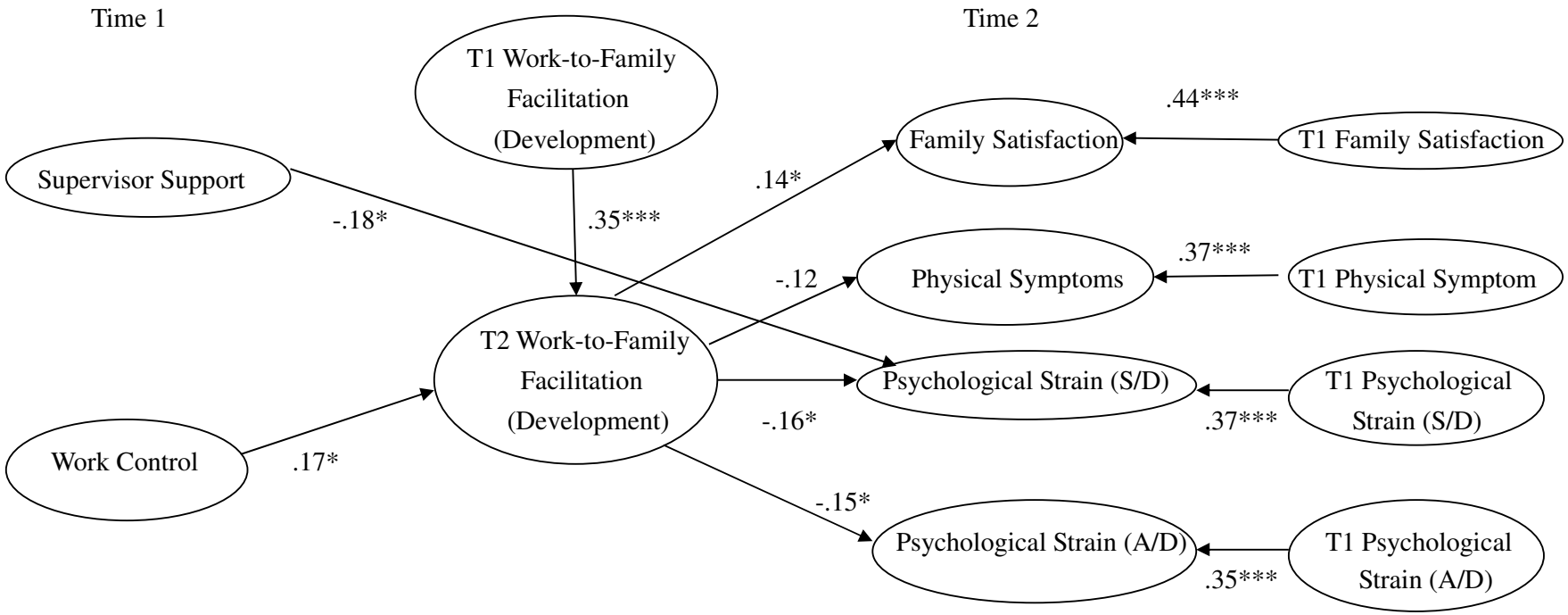
** p < .05, ** p < .01, *** p < .001*

Longitudinal Mediating Effects of Work-to-Family Facilitation (Development) (Model A2)

The proposed longitudinal mediation model of work-to-family facilitation (Development) (see Figure 8.1, page 172) yielded unacceptable fit statistics ($\chi 2$ = 1227.65, df = 841, $\chi 2$/df = 1.46, RMSEA = .06, SRMR = .10, GFI = .90. This model was therefore modified according to the modification indices.

The modification indices suggested that adding the direct path from supervisor support at Time 1 to psychological strain (Social Dysfunction) at Time 2 would improve the fit statistics of the model. This was supported by related findings (e.g. Kiani & Khodabkhsh, 2013) that supervisor support was significantly related to decreased psychological strain. The indices also indicated that deleting direct paths from work predictors (that is supervisor support and perceived organisational support) at Time 1 to work-to-family facilitation (Development) at Time 2 would improve the model fit. Previous studies (e.g. McNall, Masuda & Nicklin, 2010) show that work-family enrichment was decreased when work support could not be permanently sustained.

The above modifications significantly improved the fit statistics of the modified model (χ2: 707.75, df: 509, χ2/df: 1.39, RMSEA: .04, SRMR: .06, GFI: .92) in Figure 8.3. The AIC value (882.75) for the modified model was smaller than the initial model (1437.65). Supported by the modification indices, the direct path from perceived organisational support at Time 1 to work-to-family facilitation (Development) was deleted, and perceived organisational support at Time 1 was also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, perceived organisational support at Time 1 was removed from the model. In addition, the direct path from supervisor support at Time 1 to work-to-family facilitation (Development) was deleted in the modified model. The standardised parameter estimates confirm that work-to-family facilitation (Development) was a longitudinal mediator of the relationships between work control and family satisfaction, psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression). However, very few longitudinal mediating effects of work-to-family facilitation (Development) were obtained. Three out of twelve mediation routes (25%) were significant.



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.3 Path coefficients for the modified longitudinal mediation model of work-to-family facilitation (Development) (Model A2)

The direct, indirect and total effects statistics were assessed in order to examine specific longitudinal mediating effects of work-to-family facilitation (Development). Table 8.5 indicates that work-to-family facilitation (Development) at Time 2 partially mediated the effects of work control at Time 1 on family satisfaction at Time 2 and psychological strain (Anxiety/Depression) at Time 2, and also fully mediated the effects of work control at Time 1 on psychological strain (Social Dysfunction) at Time 2.

Table 8.5 Longitudinal mediating effects of work-to-family facilitation (Development)

T1 Predictor Variable → T2 Mediator → T2 Criterion Variable	**Direct Effect**	**Indirect Effect**	**Total Effect**	**Type of Mediation**
WC1 → WFDEV → FS	.18*	.30*	.48	Partial
WC1 → WFDEV → PSYSSD	-.06	.01*	-.05	Full
WC1 → WFDEV → PSYSAD	-.23**	.02*	-.21	Partial

Note. WC1 = Work Control at Time 1, WFDEV = Work-to-Family Facilitation (Development) at Time 2, FS = Family Satisfaction at Time 2, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2, PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2
** p < .05, ** p < .01, *** p < .001*

Longitudinal Mediating Effects of Work-to-Family Facilitation (Affect) (Model A3)

The proposed longitudinal mediation model of work-to-family facilitation (Affect) (see Figure 8.1, page 172) demonstrated unacceptable fit statistics ($\chi 2$ = 1256.66, df = 841, $\chi 2$/df = 1.49, RMSEA = .05, SRMR = .10, GFI = .90). This model was therefore modified according to the modification indices.

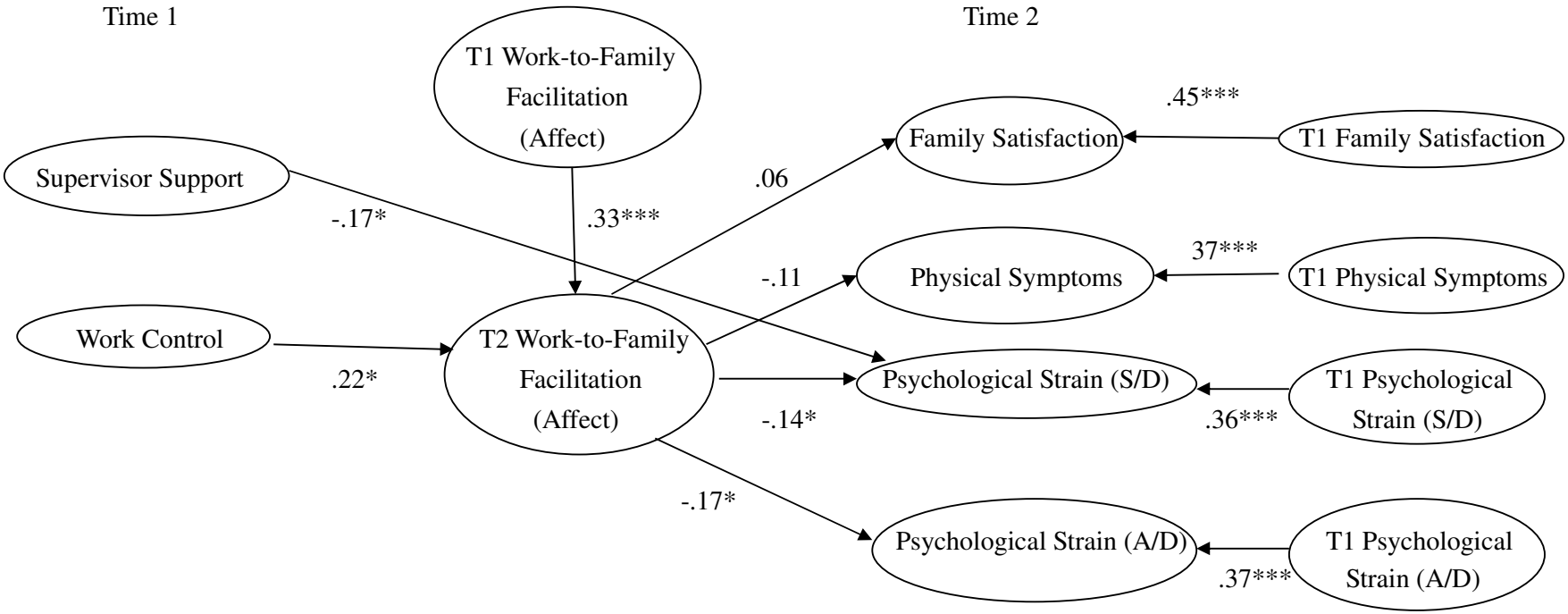
The modification indices suggested that adding the direct path from supervisor support at Time 1 to psychological strain (Social Dysfunction) would improve the fit statistics of the model. These indices also indicated that deleting direct paths from work predictors (that is, supervisor support and perceived

organisational support) at Time 1 to work-to-family facilitation (Affect) at Time 2, would improve the fit statistics. These suggestions significantly improved the fit statistics of the modified model in Figure 8.4 ($\chi 2 = 746.37$, df = 509, $\chi 2/df = 1.50$, RMSEA = .05, SRMR = .07, GFI = .91), and they were supported by previous findings (Kiani & Khodabkhsh, 2013; McNall, Masuda & Nicklin, 2010) which were mentioned earlier. The AIC value (938.37) for the modified model was also smaller than the initial model (1483.66).

Supported by the modification indices, the direct path from perceived organisational support at Time 1 to work-to-family facilitation (Affect) was deleted, and perceived organisational support at Time 1 was also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, perceived organisational support at Time 1 was removed from the model. Furthermore, the direct path from supervisor support at Time 1 to work-to-family facilitation (Development) was deleted in the modified model.

The standardised parameter estimates shown in Figure 8.4 indicate that work-to-family facilitation (Affect) was a longitudinal mediator of the relationships between work control and psychological strain (Social Dysfunction), and psychological strain (Anxiety/Depression). In addition, there were very few longitudinal mediating effects of work-to-family facilitation (Affect) obtained in this study. Two out of twelve mediation routes (17%) were significant.

The direct, indirect and total effects statistics were examined in order to assess specific longitudinal mediating effects of work-to-family facilitation (Affect). Table 8.6 indicates that work-to-family facilitation (Affect) fully mediated the effects of work control at Time 1 on psychological strain (Social Dysfunction) at Time 2, and also partially mediated the effect of work control at Time 1 on psychological strain (Anxiety/Depression) at Time 2.



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.4 Path coefficients for the modified longitudinal mediation model of work-to-family facilitation (Affect) (Model A3)

Table 8.6 Longitudinal mediating effects of work-to-family facilitation (Affect)

T1 Predictor Variable → T2 Mediator → T2 Criterion Variable	Direct Effect	Indirect Effect	Total Effect	Type of Mediation
WC1 → WFAFF → PSYSSD	-.07	.08*	.01	Full
WC1 → WFAFF → PSYSAD	-.22**	.05*	-.17	Partial

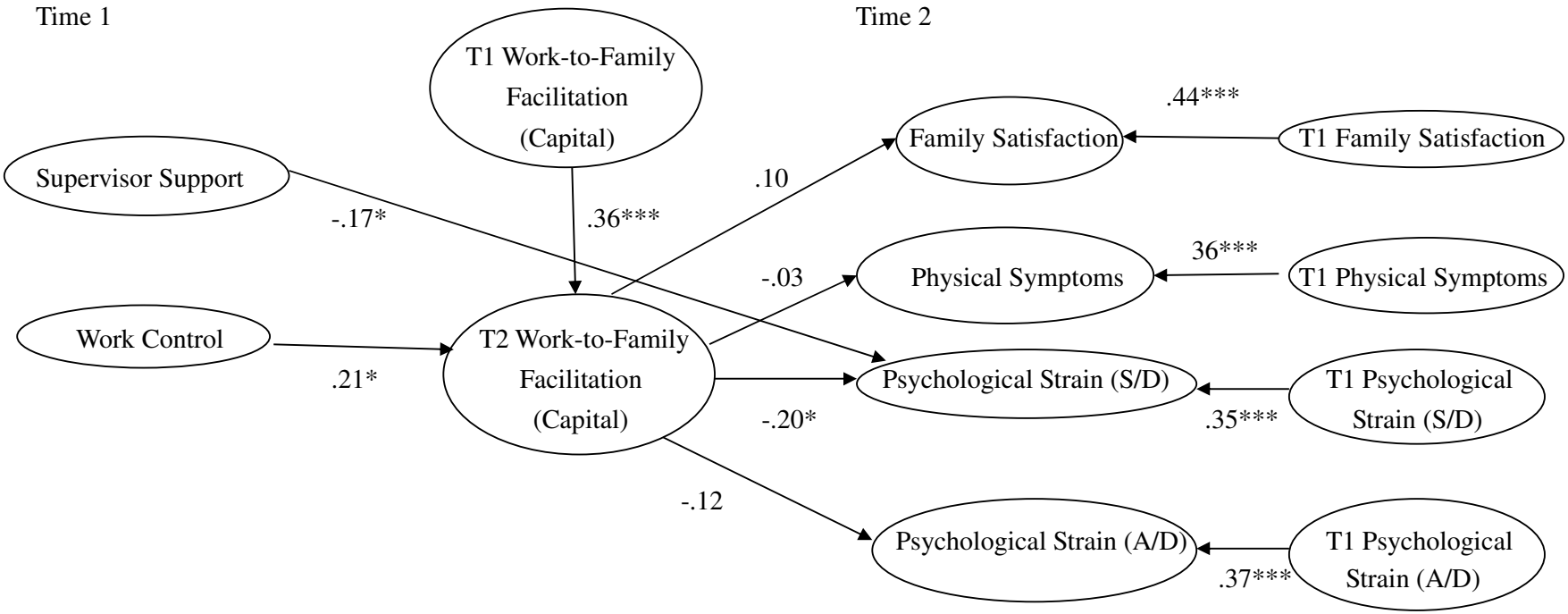
Note. WC1 = Work Control at Time 1, WFAFF = Work-to-Family Facilitation (Affect) at Time 2, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2, PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2

Longitudinal Mediating Effects of Work-to-Family Facilitation (Capital) (Model A4)

The proposed longitudinal mediation model of work-to-family facilitation (Capital) (see Figure 8.1, page 172) yielded unacceptable fit statistics ($\chi 2$ = 1247.78, df = 841, $\chi 2$/df = 1.48, RMSEA = .05, SRMR = .09, GFI = .88). This model was therefore modified according to the modification indices.

The modification indices indicated that adding the direct path from supervisor support at Time 1 to psychological strain (Social Dysfunction) at Time 2 would improve the fit statistics of the model. The indices also suggested that deleting direct paths from work predictors (that is, supervisor support and perceived organisational support) at Time 1 to work-to-family facilitation (Capital) at Time 2 would improve the model fit. These changes significantly improved the fit statistics of the model shown in Figure 8.5 ($\chi 2$ = 759.00, df = 509, $\chi 2$/df = 1.49, RMSEA = .05, SRMR = .07, GFI = .92), and they were supported by previous findings (Kiani & Khodabkhsh, 2013; McNall, Masuda & Nicklin, 2010) which were described earlier. The AIC value (939.78) for the modified model was also smaller than the initial model (1423.78).

A precondition of mediation is that predictor variables should be significantly related to the mediator variable (Mathieu & Taylor, 2006). Supported by modification indices, the direct path from supervisor support at Time 1 to



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.5 Path coefficients for the modified longitudinal mediation model of work-to-family facilitation (Capital) (Model A4)

work-to-family facilitation (Capital) at Time 2 was deleted in the modified model. In other words, supervisor support at Time 1 was not significantly related to work-to-family facilitation (Capital) at Time 2. Figures 8.3 and 8.4 also show similar results that supervisor support at Time 1 was not significantly related to work-to-family facilitation variables (Development and Affect), which in turn did not fulfill the above precondition of mediation. Therefore, work-to-family facilitation variables (Development, Affect and Capital) were not significant longitudinal mediators of the relationships between supervisor support and family satisfaction, physical symptoms and psychological strain. Hypotheses 58 (a, b and c) were not supported.

Based on the modification indices, the direct path from perceived organisational support at Time 1 to work-to-family facilitation (Capital) was deleted, and perceived organisational support at Time 1 was also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, perceived organisational support at Time 1 was removed from the modified model of work-to-family facilitation (Capital). Figures 8.3 and 8.4 also show that perceived organizational support at Time 1 was also removed from the modified mediation models of work-to-family facilitation variables (Development and Affect), which in turn did not fulfill the precondition of mediation suggested by Mathieu and Taylor (2006). These findings illustrate that work-to-family facilitation variables (Development, Affect and Capital) at Time 2 were not significant longitudinal mediators of the relationships between perceived organisational support and family satisfaction, physical symptoms at psychological strain. Hypotheses 59 (a, b and c) were therefore not supported.

The standardised parameter estimates shown in Figure 8.5 indicate that work-to-family facilitation (Capital) was a longitudinal mediator of the

relationship between work control and psychological strain (Social Dysfunction). However, work-to-family facilitation (Capital) at Time 2 was not significantly related to physical symptoms at Time 2. Similar results were also found in the longitudinal mediation models of work-to-family facilitation (Development and Affect). Hypothesis 60 (b) was therefore not supported. One out of twelve mediation routes (8%) was significant in the analysis of longitudinal mediating effects for work-to-family facilitation (Capital).

The direct, indirect and total effects statistics were examined for assessing specific longitudinal mediating effects of work-to-family facilitation (Capital). Table 8.7 shows that work-to-family facilitation (Capital) at Time 2 fully mediated the effects of work-control at Time 1 on psychological strain (Social Dysfunction) at Time 2.

The above findings illustrate very few longitudinal mediating effects of work-to-family facilitation obtained in the present study. Six out of thirty six mediation routes (17%) were significant. Work-to-family facilitation (Development) was the only significant mediator of the relationship between work control at Time 1 and family satisfaction at Time 2, which partially supported hypothesis 60 (a). Work-to-family facilitation variables (Development, Affect and Capital) were significant mediators of the relationship between work control at Time 1 and psychological strain (Social Dysfunction) at Time 2, but only work-to-family facilitation variables (Development and Affect) were significant mediators of the relationship between work control at Time 1 and psychological strain (Anxiety/Depression) at Time 2. Hypothesis 60 (c) was partially supported.

Table 8.7 Longitudinal mediating effects of work-to-family facilitation (Capital)

T1 Predictor Variable → T2 Mediator → T2 Criterion Variable	Direct Effect	Indirect Effect	Total Effect	Type of Mediation
WC1 → WFCAP → PSYSSD	-.05	.01*	.04	Full

Note. WC1 = Work Control at Time 1, WFCAP = Work-to-Family Facilitation (Capital) at Time 2, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2
** p < .05, ** p < .01, *** p < .001*

8.3.2 Longitudinal Mediating Effects in the Family Domain

Overall Longitudinal Mediation Model in the Family Domain (Model B)

The proposed overall longitudinal mediation model of work-family conflict and enrichment in the family domain (see Figure 8.6) yielded unacceptable fit statistics ($\chi 2 = 4196.77$, df = 2091, $\chi 2/df = 2.00$, RMSEA = .07, SRMR = .11, GFI = .82). This overall longitudinal mediation model was therefore modified according to the modification indices.

These indices suggested that adding direct paths from family control at Time 1 to physical symptoms, psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depression) at Time 2 would significantly improve the fit statistics of the model. This was supported by previous findings (Boyer et al., 2005; Shelley & Pakenham, 2010) that family control was significantly related to decreased physical illness and psychological distress. The indices also indicated that deleting direct paths from family predictors (that is family workload, the total working hours in family per week and the total number of dependents) at Time 1 to family-to-work interference at Time 2 would improve the model fit. These modifications were supported by other studies (e.g. Boyer et al., 2008) that some forms of family demand (e.g. total hours spent in family, total dependents at home) were not significantly associated with family-to-work interference.

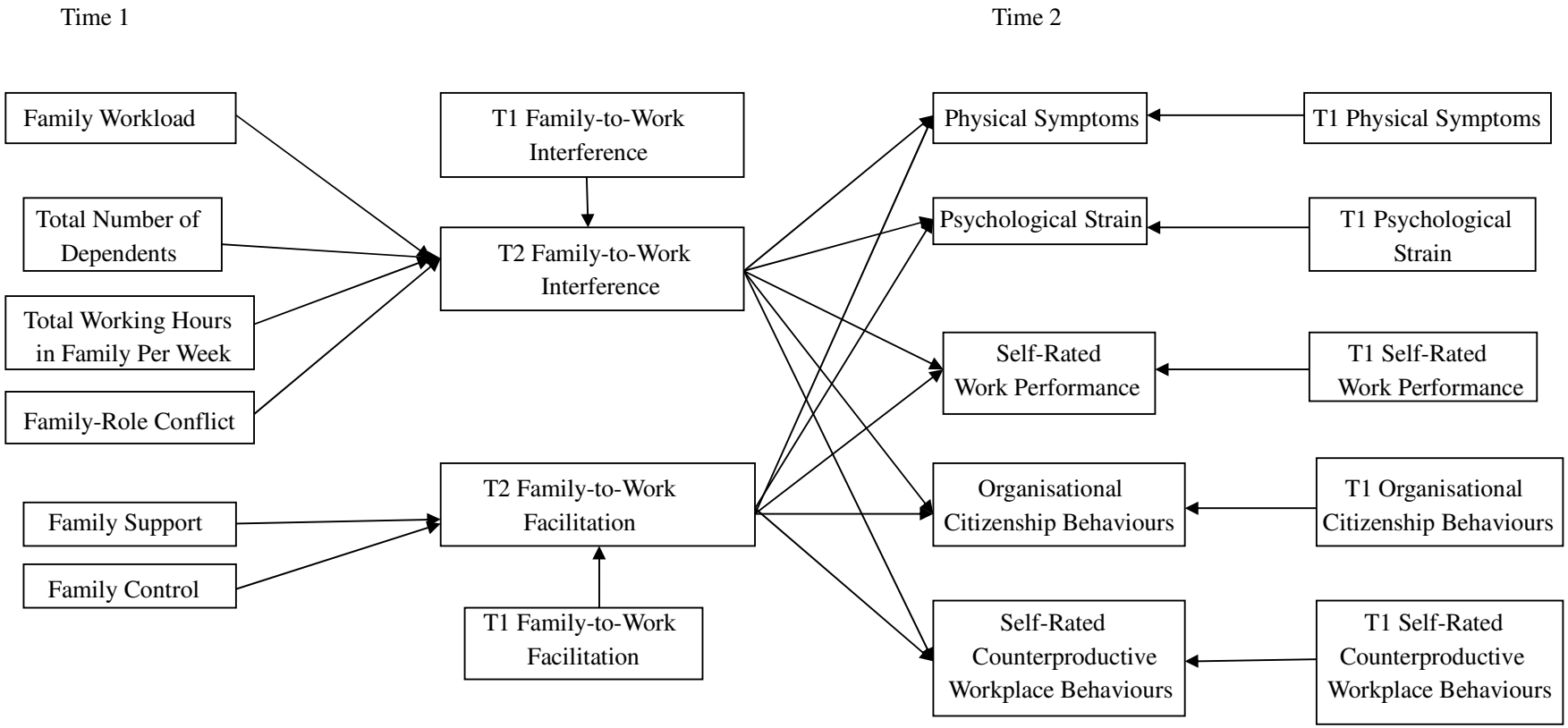


Figure 8.6 Overall longitudinal mediation model of work-family conflict and enrichment in the family domain (Model B)

In addition, The modification indices showed that deleting direct paths from family support at Time 1 to family-to-work facilitation variables (Development, Affect and Capital) at Time 2, and from family control at Time 1 to family-to-work facilitation variables (Development and Capital) at Time 2 would improve the fit statistics of the model. These suggestions were supported by other findings that some forms of family support (e.g. personal free time in family) were not significantly related to family-to-work facilitation (Hill, 2005), and perceived control might not necessarily contribute positive effects to an individual's feelings in personal life (Wong, 2001).

The above modifications significantly improved the fit statistics of the modified model ($\chi 2 = 2837.23$, df = 1719, $\chi 2/df = 1.65$, RMSEA = .05, SRMR = .07, GFI = .90) shown in Table 8.8. The AIC value (3187.23) for the modified model was also smaller than the initial model (4456.77). Supported by the modification indices, family workload, the total working hours in family per week, the total number of dependent and family support at Time 1 were removed from the modified model. Family-to-work interference and facilitation contributed very few longitudinal mediating effects in the present study.

As described earlier, AMOS cannot provide significance tests for multiple mediators. Supported by the recommendation of Kline et al. (2006), the overall longitudinal mediation model of work-family conflict and enrichment in the family domain was divided into four separate sub-models in order to examine specific longitudinal mediating effects. Each of the sub-models represented a specific mediator between predictor and criterion variables in the family domain. Model B1 examined the longitudinal mediating effects of family-to-work interference. Model B2 tested the longitudinal mediating effects of family-to-work facilitation (Development). Model B3 examined the longitudinal

Table 8.8 Path coefficients for the modified overall longitudinal mediation model of work-family conflict and enrichment in the family domain

Family-to-Work Interference		**Family-to-Work Facilitation (Development)**		**Family-to-Work Facilitation (Affect)**		**Family-to-Work Facilitation (Capital)**	
Predictor Variable → Criterion Variable	Standardised Parameter Estimates	Predictor Variable → Criterion Variable	Standardised Parameter Estimates	Predictor Variable → Criterion Variable	Standardised Parameter Estimates	Predictor Variable → Criterion Variable	Standardised Parameter Estimates
FRCON1→FWC	.20*	FMCONT1→PHYS	-.22**	FMCONT1→FWAFF	.21*	FMCONT1→PHYS	-.22**
FWC→PHYS	..26**	FMCONT1→PSYSSD	-.26**	FWAFF→PHYS	-.07	FMCONT1→PSYSSD	-.26**
FWC→PSYSSD	.16*	FWCONT1→PSYSAD	-.26**	FWAFF→PSYSSD	-.25**	FWCONT1→PSYSAD	-.26**
FWC→PSYSAD	.23*	FWDEV→PHYS	-.08	FWAFF→PSYSAD	-.20*	FWCAP→PHYS	-.11
FWC→WP	-.25**	FWDEV→PSYSSD	-.07	FWAFF→WP	.07	FWCAP→PSYSSD	-.20*
FWC→OCB	-.05	FWDEV→PSYSAD	-.10	FWAFF→OCB	.19*	FWCAP→PSYSAD	-.11
FWC→CWB	.20*	FWDEV→WP	.05	FWAFF→CWB	.08	FWCAP→WP	.08
FWC1-FWC	.34***	FWDEV→OCB	.14*	FWAFF1→FWAFF	.26**	FWCAP→OCB	.14*
PHYS1→PHYS	.36***	FWDEV→CWB	.07	PHYS1→PHYS	.36***	FWCAP→CWB	.08
PSYSSD1→PSYSSD	.37***	FWDEV1→FWDEV	.27**	PSYSSD1→PSYSSD	.37***	FWCAP 1→FWCAP	.27**
PSYSAD1→PSYSAD	.36***	PHYS1→PHYS	.36***	PSYSAD1→PSYSAD	.36***	PHYS1→PHYS	.36***
WP1→WP	.33***	PSYSSD1→PSYSSD	.37***	WP1→WP	.33***	PSYSSD1→PSYSSD	.37***
OCB1→OCB	.45***	PSYSAD1→PSYSAD	.36***	OCB1→OCB1	.45***	PSYSAD1→PSYSAD	.36***
CWB1→CWB	.18*	WP1→WP	.33***	CWB1→CWB	.18*	WP1→WP	.33***
		OCB1→OCB1	.45***			OCB1→OCB1	.45***
		CWB1→CWB	.18***			CWB1→CWB	.18*

Note: See footnotes on page 236

Footnotes for Table 8.9

FRCON1 = Family-Role Conflict at Time 1, FMCONT1 = Family Control at Time 1, FWI1 = Family-to-Work Interference at Time 1, FWI = Family-to-Work Interference at Time 2, FWDEV1 = Family-to-Work Facilitation (Development) at Time 1, FWDEV = Family-to-Work Facilitation (Development) at Time 2, FWAFF1 = Family-to-Work Facilitation (Affect) at Time 1, FWAFF = Family-to-Work Facilitation (Affect) at Time 2, FWCAP1 = Family-to-Work (Capital) at Time 1, FWCAP =Family-to-Work Facilitation (Capital) at Time 2, PHYS1 = Physical Symptoms at Time 1, PHYS = Physical Symptoms at Time 2, PSYSSD1 = Psychological Strains (Social Dysfunction) at Time 1, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2, PSYSAD1 = Psychological Strains (Anxiety/Depression) at Time 1, PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2, WP1 = Self-Rated Work Performance at Time 1, WP = Self-Rated Work Performance at Time 2, OCB1 = Organizational Citizenship Behaviours at Time 1, OCB = Organizational Citizenship Behaviours at Time 2, CWB1 = Self-Rated Counterproductive Workplace Behaviours at Time 1, CWB = Self-Rated Counterproductive Workplace Behaviours at Time 2

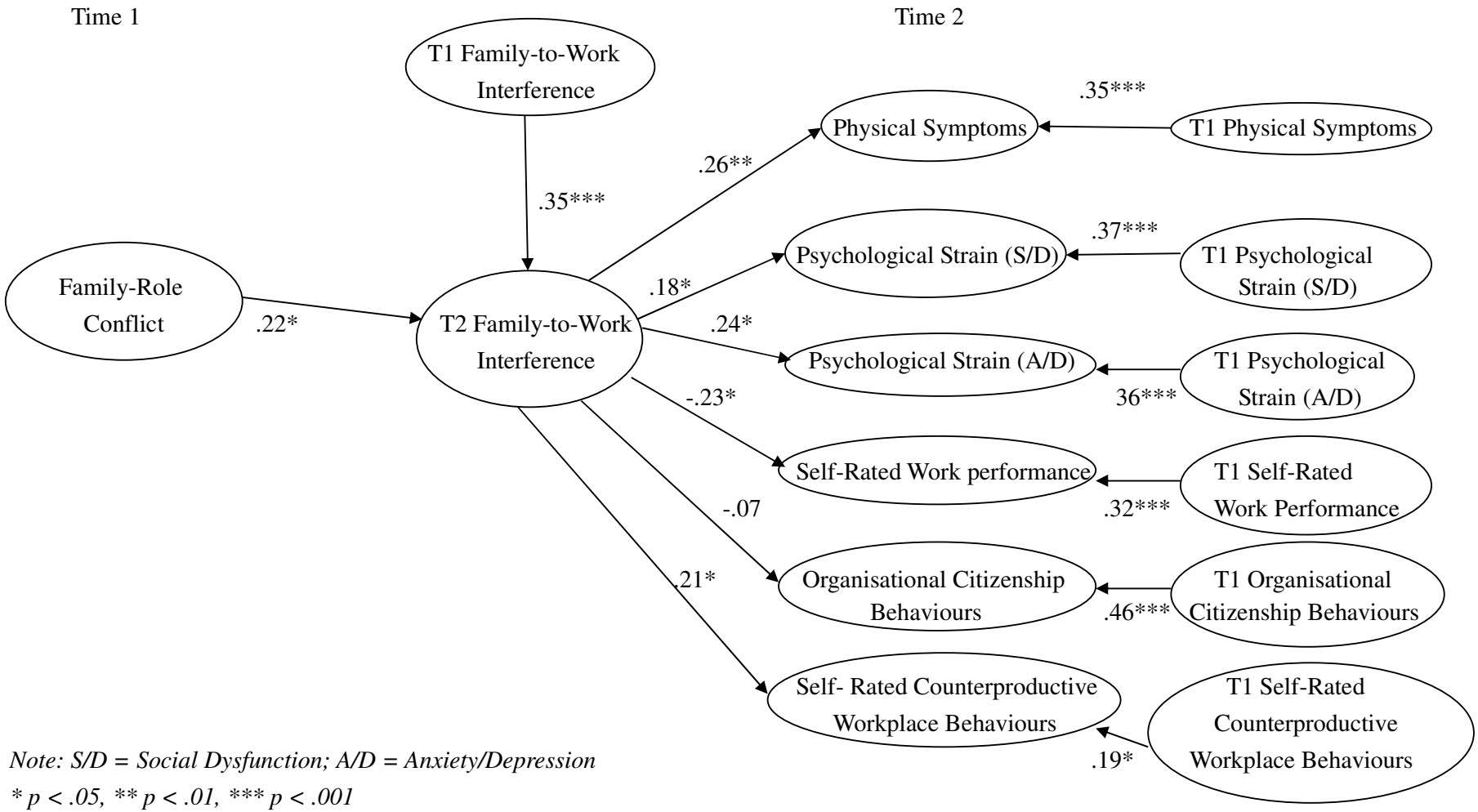
** p < .05, ** p < .01, *** p < .001*

mediating effects of family-to-work facilitation (Affect), and Model B4 tested the longitudinal mediating effects of family-to-work facilitation (Capital).

Longitudinal Mediating Effects of Family-to-Work Interference (Model B1)

The proposed longitudinal mediation model of family-to-work interference (see Figure 8.6, page 190) yielded unacceptable fit statistics ($\chi 2$ = 1266.54, df = 793, $\chi 2$/df: = 1.60, RMSEA = .05, SRMR = .10, GFI = .88). Therefore, this model was modified according to the modification indices.

The modification indices suggested that deleting the direct paths from family predictors (that is, family workload, the total working hours in family per week and from the total number of dependents) at Time 1 to family-to-work interference at Time 2 would improve the model fit. These modifications were supported by previous findings (e.g. Boyer et al., 2008) that family demands might not significantly relate to family-to-work interference. They significantly improved the fit statistics of the modified model ($\chi 2$ = 892.94, df = 610, $\chi 2$/df = 1.51, RMSEA = .05, SRMR = .07, GFI = .90) shown in Figure 8.7. The AIC value (968.94) for the modified model was also smaller than the initial model (1382.54).



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.7 Path coefficients for the modified longitudinal mediation model of family-to-work interference (Model B1)

As stated earlier, a precondition of mediation is that predictor variables should be significantly related to the mediator variable (Mathieu & Taylor, 2006). Supported by the modification indices, the direct paths from family workload, the total working hours in family per week and the total number of dependents at Time 1 to family-to-work interference at Time 2 were deleted, and these variables at Time 1 were also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, family workload, the total working hours in family per week at Time 1 and the total number of dependents at Time 1 were removed from the model. These results illustrate that family demands at Time 1 were not significantly associated with family-to-work interference at Time 2, which in turn did not fulfill the above precondition of mediation. In other words, family-to-work interference was not a significant longitudinal mediator of the relationships between family demands and physical symptoms, psychological strain (Social Dysfunction), psychological strain (Anxiety/Depression), self-rated work performance, organizational citizenship behaviours and self-rated counterproductive workplace behaviours. Therefore, hypotheses 56 (a, b, c, d and e) were not supported.

The standardised parameter estimates in Figure 8.7 indicate that family-to-work interference was a longitudinal mediator of the relationships between family-role conflict and physical symptoms, psychological strain, self-rated work performance and self-rated counterproductive workplace behaviours. However, family-to-work interference at Time 2 was not significantly related to organisational citizenship behaviours at Time 2. Hypothesis 57 (d) was therefore not supported. There were very few longitudinal mediating effects of family-to-work interference obtained in this study. Five out of twenty four mediation routes (21%) were significant.

The direct, indirect and total effects statistics were assessed in order to examine the specific longitudinal mediating effects of family-to-work interference. Table 8.9 indicates family-to-work interference at Time 2 fully mediated the effects of family-role conflict at Time 1 on physical symptoms, psychological strain (Social Dysfunction), psychological strain (Anxiety/Depression), self-rated work performance and self-rated counterproductive productive behaviours at Time 2. Hypotheses 57 (a, b, c and e) were therefore supported.

Table 8.9 Longitudinal Mediating Effects of Family-to-Work Interference

T1 Predictor Variable → T2 Mediator → T2 Criterion Variable	**Direct Effect**	**Indirect Effect**	**Total Effect**	**Type of Mediation**
FRCON1 → FWI → PHYS	.07	.48**	.55	Full
FRCON1 → FWI → PSYSSD	.00	.18*	.18	Full
FRCON1 → FWI → PSYSAD	.03	.46*	.49	Full
FRCON1 → FWI → WP	-.02	-.01*	-.03	Full
FRCON1 → FWI → CWB	.05	.01*	.06	Full

Note. FRCON1 = Family-Role Conflict at Time 1, FWI = Family-to-Work Interference at Time 2, PHYS = Physical Symptoms at Time 2, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2 PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2, WP = Self-Rated Work Performance at Time 2, CWB = Self-Rated Counterproductive Productive Behaviours at Time 2
** p < .05, ** p < .01, *** p < .001*

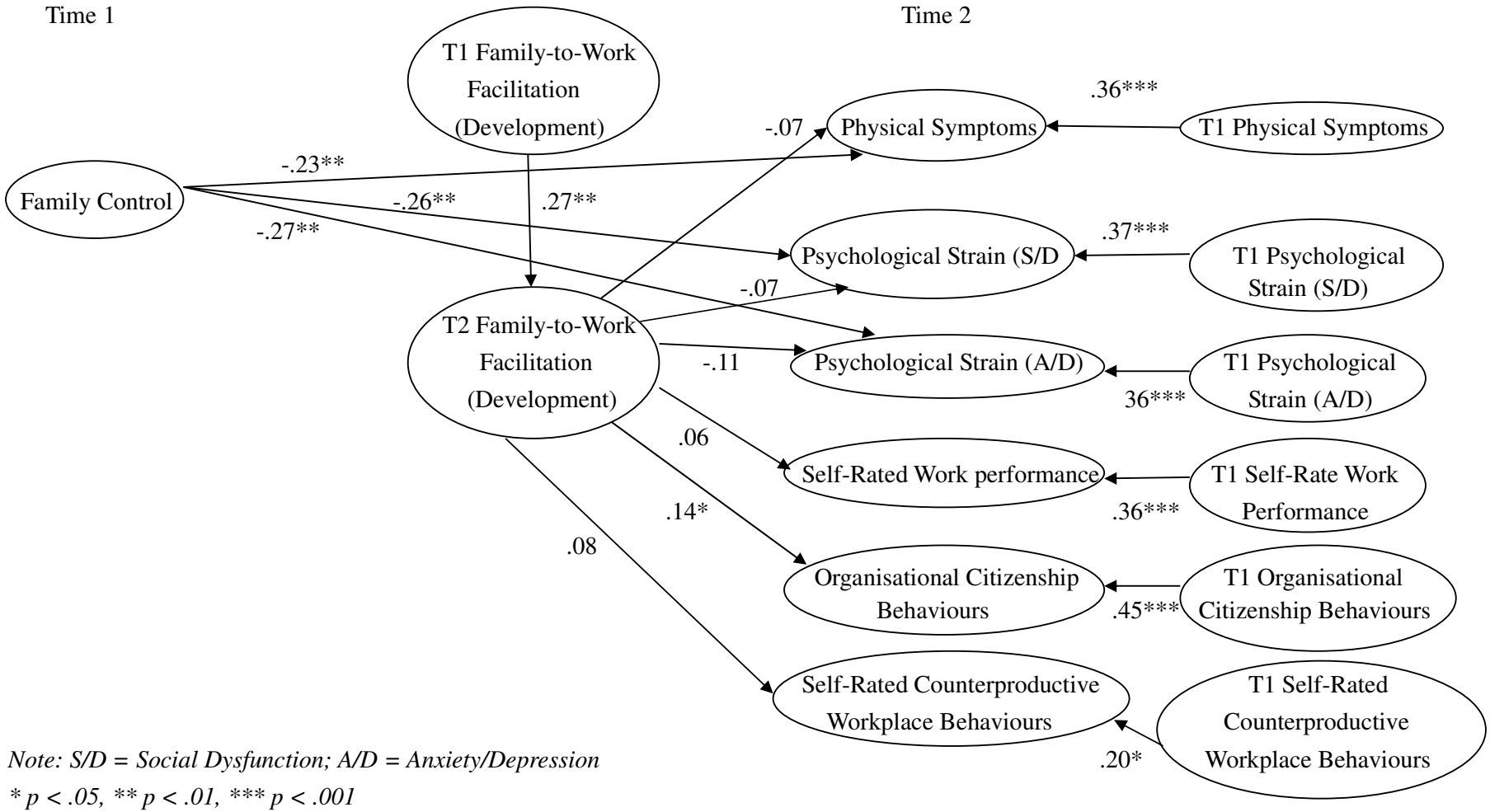
Longitudinal Mediating Effects of Family-to-Work Facilitation (Development) (Model B2)

The proposed longitudinal mediation model of family-to-work facilitation (Development) (see Figure 8.6, page 190) yielded unacceptable fit statistics ($\chi 2$ = 951.05, df = 540, $\chi 2$/df = 1.76, RMSEA = .06, SRMR = .11, GFI = .83). This model was therefore modified based on the modification indices.

The modification indices suggested that adding the direct paths from family control at Time 1 to physical symptoms, psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depress) at Time 2 would improve the fit

statistics of the model. These changes were supported by other studies (e.g. Boyer et al., 2005; Shelley & Pakenham, 2010) that family control was significantly associated with better physical and psychological health. These indices also showed that deleting the direct paths from family support at Time 1 to family-to-work facilitation (Development) at Time 2, and from family control at Time 1 to family-to-work facilitation (Development) at Time 2 would improve the fit statistics of the model. These change were supported by related findings that family support might not necessarily relate to family-to-work facilitation (Hill, 2005), and perceived control might also not necessarily contribute positive effects on individual's feelings in personal life (Wong, 2001).

The above changes significantly improved the fit statistics of the modified model ($\chi 2 = 786.71$, df = 499, $\chi 2/df = 1.57$, RMSEA = .05, SRMR = .06, GFI = .90) shown in Figure 8.8. The AIC value (978.71) for the modified model was also smaller than the initial model (1084.05). Supported by the modification indices, the direct path from family support at Time 1 to family-to-work facilitation (Development) at Time 2 was deleted, and this variable was also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, family support at Time 1 was removed from the model. In addition, the direct path from family control at Time 1 to family-to-work facilitation (Development) at Time 2 was also deleted in the modified model. The above findings illustrate that the longitudinal mediating effects of family-to-work facilitation (Development) were not significantly supported in Model B2.



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

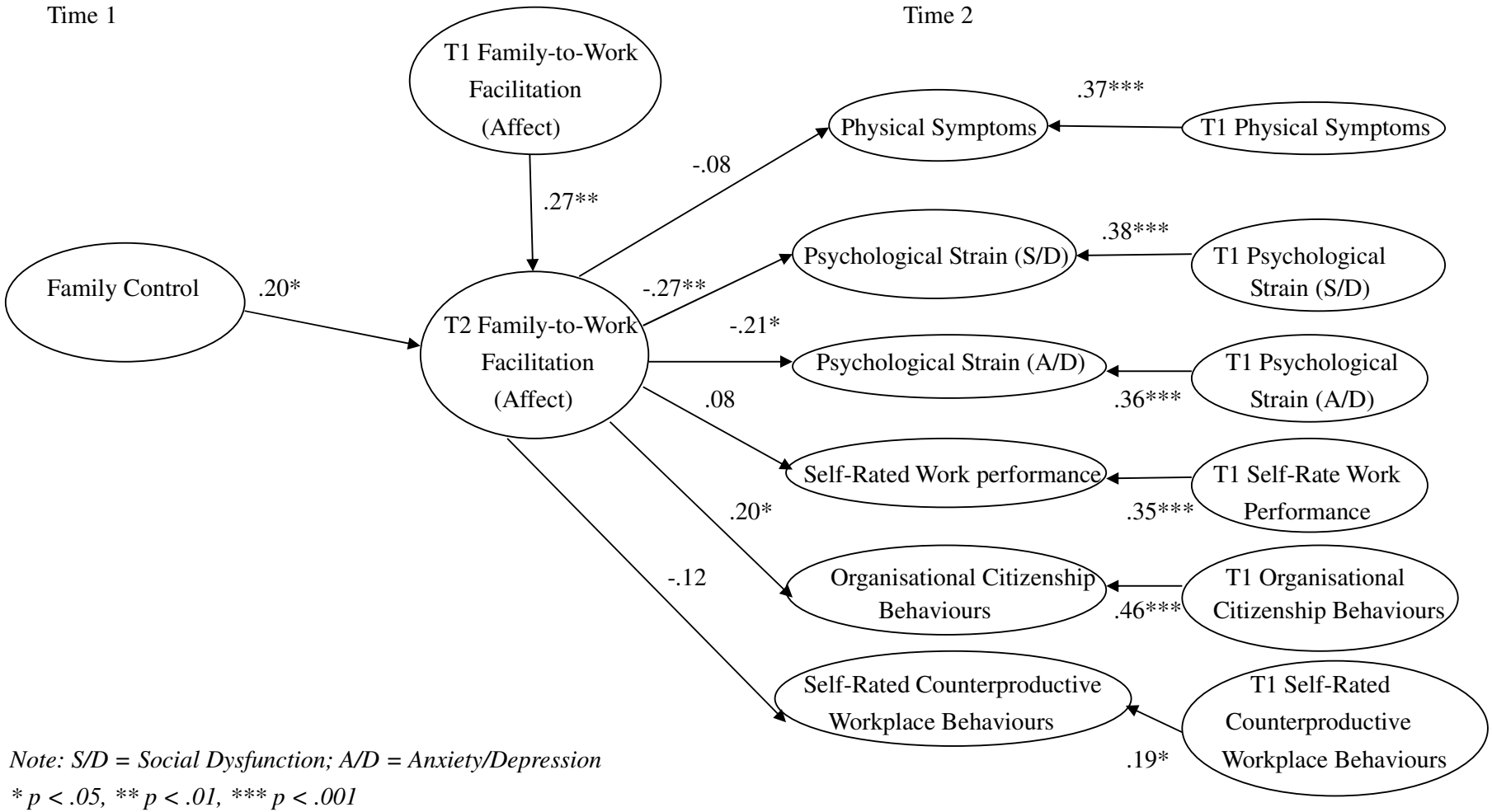
Figure 8.8 Path coefficients for the longitudinal mediation model of family-to-work facilitation (Development) (Model B2)

Longitudinal Mediating Effects of Family-to-Work Facilitation (Affect) (Model B3)

The proposed longitudinal mediation model of family-to-work facilitation (Affect) (see Figure 8.6, page 190) demonstrated unacceptable fit statistics ($\chi 2$ = 978.21, df = 540, $\chi 2$/df = 1.81, RMSEA = .06, SRMR = .11, GFI: .88). This model was therefore modified according to the modification indices.

The modification indices suggested that deleting the direct path of family support at Time 1 to family-to-work facilitation (Affect) at Time 2 would improve the fit statistics of the model. This change was supported by previous findings (e.g. Hill, 2005) which were described earlier. This change significantly improved the fit statistics of the modified model ($\chi 2$ = 847.07, df = 499, $\chi 2$/df = 1.68, RMSEA = .05, SRMR = .07, GFI = .90) shown in Figure 8.9. The AIC value (997.07) for the modified model was smaller than the initial model (1098.21). Supported by the modification indices, the direct path from family support at Time 1 to family-to-work facilitation (Affect) at Time 2 was deleted, and this variable was also not significantly associated with other criterion variables at Time 2 in the modified model. Therefore, family support at Time 1 was removed from the model.

The standardised parameter estimates in Figure 8.9 indicate that family-to-work facilitation (Affect) was a longitudinal mediator of the relationships between family control and psychological strain (Social Dysfunction), and psychological strain (Anxiety/Depression). There were very few longitudinal mediating effects of family-to-work facilitation (Affect) obtained in this study. Three out of twelve mediation routes (25%) were significant.



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.9 Path coefficients for the longitudinal mediation model of family-to-work facilitation (Affect) (Model B3)

The direct, indirect and total effects were also examined in order to assess the specific longitudinal mediating effects of family-to-work facilitation (Affect). Table 8.10 confirms that family-to-work facilitation (Affect) at Time 2 partially mediated the effects of family control at Time 1 on psychological strain (Social Dysfunction), psychological strain (Anxiety/Depression) and organizational citizenship behaviours at Time 2.

Table 8.10 Longitudinal mediating effects of family-to-work facilitation (Affect)

T1 Predictor Variable → T2 Mediator → T2 Criterion Variable	**Direct Effect**	**Indirect Effect**	**Total Effect**	**Type of Mediation**
FRCONT1 → FWAFF → PSYSSD	-.16*	-.07**	-.23	Partial
FRCONT1 → FWAFF → PSYSAD	-.18**	-.01*	-.19	Partial
FRCONT1 → FWAFF → OCB	.14*	.40*	.54	Partial

Note. FRCONT1 = Family Control at Time 1, FWAFF = Family-to-Work Facilitation (Affect) at Time 2, PSYSSD = Psychological Strains (Social Dysfunction) at Time 2 PSYSAD = Psychological Strains (Anxiety/Depression) at Time 2, OCB = Organisational Citizenship Behaviours at Time 2
** p < .05, ** p < .01, *** p < .001*

Longitudinal Mediating Effects of Family-to-Work Facilitation (Capital) (Model B4)

The proposed longitudinal mediation model of family-to-work facilitation (Capital) (see Figure 8.6, page 190) yielded unacceptable fit statistics ($\chi 2$ = 943.40, df = 540, $\chi 2$/df = 1.75, RMSEA = .06, SRMR = .10, GFI = .87). This model was modified based on the modification indices.

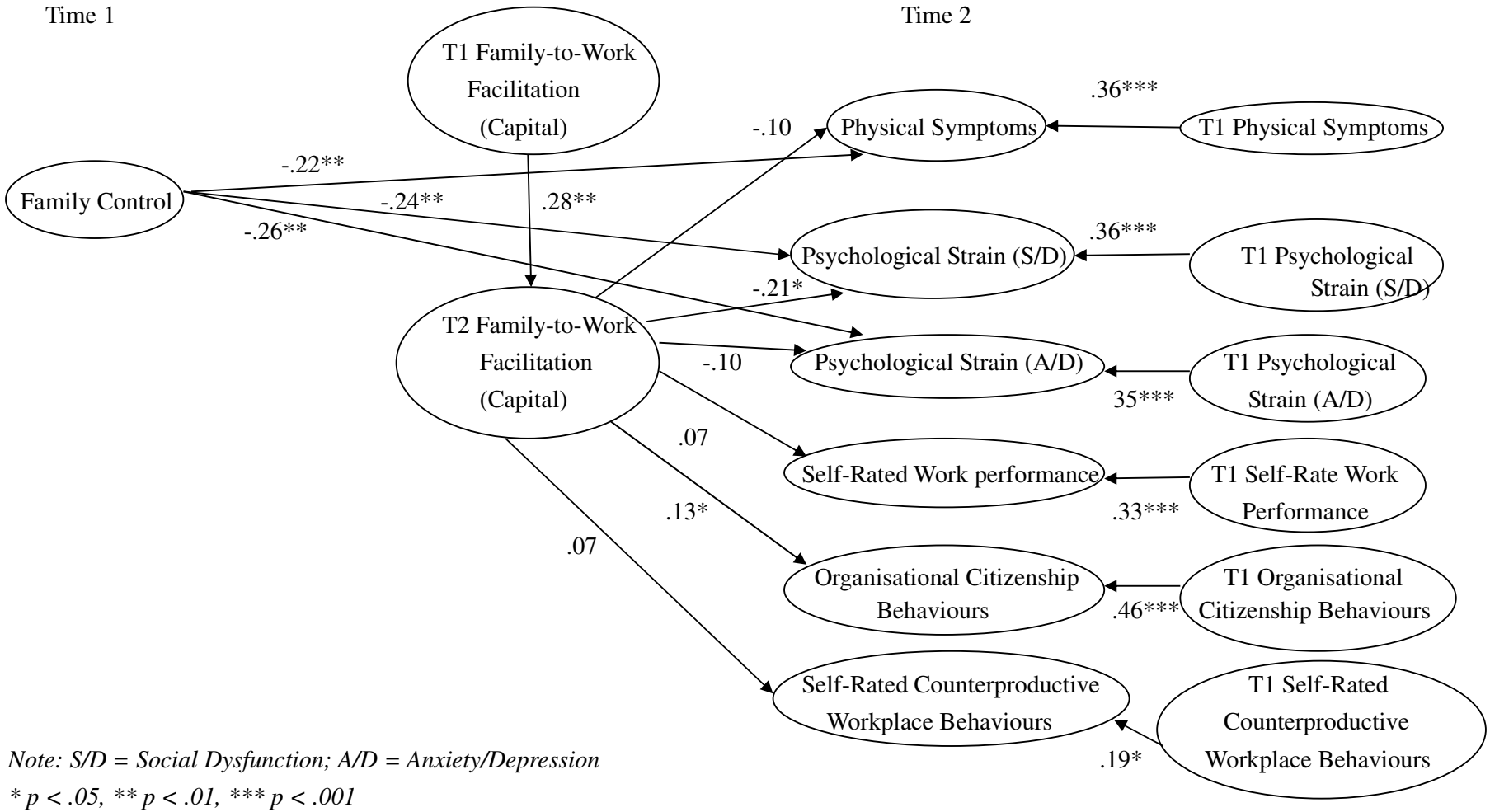
The modification indices showed that adding the direct paths from family control at Time 1 to physical symptoms, psychological strain (Social Dysfunction) and psychological strain (Anxiety/Depress) at Time 2 would improve the model fit. These indices also indicated that deleting the direct paths from family support at Time 1 to family-to-work facilitation (Development) at Time 2, and from family control at Time 1 to family-to-work facilitation (Development) at

Time 2 would improve the fit statistics of the model. These modifications significantly improved the fit statistics of the modified model ($\chi 2 = 788.64$, df = 499, $\chi 2/df = 1.58$, RMSEA = .05, SRMR = .06, GFI = .91) in Figure 8.10. They were supported by previous findings (Boyer et al., 2005; Hill, 2005; Shelley & Pakenham, 2010; Wong 2001) which were described earlier. The AIC value (984.64) for the modified model was smaller than the initial model (1057.40).

Supported by the modification indices, the direct path from family support at Time 1 to family-to-work facilitation (Capital) at Time 2 was deleted, and this variable was also not significantly related to other criterion variables at Time 2 in the modified model. Therefore, family support at Time 1 was removed from the model. In addition, the direct path from family control at Time 1 to family-to-work facilitation (Capital) at Time 2 was deleted in the modified model. These results illustrate that the longitudinal mediating effects of family-to-work facilitation (Capital) were not significantly supported in Model B4.

Based on the above findings, there were very few longitudinal mediating effects of family-to-work facilitation obtained in the present study. Three out of thirty six mediation routes (8%) were significant.

As described earlier, a precondition of mediation is that predictor variables should be significantly related to the mediator variable (Mathieu & Taylor, 2006). Figures 8.8, 8.9 and 8.10 show that family support at Time 1 was not significantly related to family-to-work facilitation variables (Development, Affect and Capital) at Time 2. In other words, family-to-work facilitation variables (Development, Affect and Capital) were significant longitudinal mediators of the relationships between family support and physical symptoms, psychological strain (Social Dysfunction), psychological strain (Anxiety/Depression), self-rated work



Note: S/D = Social Dysfunction; A/D = Anxiety/Depression
** p < .05, ** p < .01, *** p < .001*

Figure 8.10 Path coefficients for the longitudinal mediation model of family-to-work facilitation (Capital) (Model B4)

performance, organizational citizenship behaviours and self-rated counterproductive workplace behaviours. Therefore, hypotheses 61 (a, b, c, d and e) were not supported.

The above findings also indicate that family-to-work facilitation (Affect) partially transmitted the effects of family control at Time 1 on psychological (Social Dysfunction), psychological strain (Anxiety/Depression) and organisational citizenship behaviours at Time 2. Hypotheses 62 (b and d) were partially supported. Family-to-work facilitation variables (Development, Affect and Capital) at Time 2 were not significantly related to physical symptoms, self-rated work performance and self-rated counterproductive productive behaviours at Time 2, although family control at Time 1 was positively related to family-to-work facilitation (Affect) at Time 2. Hypotheses 62 (a, c and e) were not supported.

Overall, there were very few longitudinal mediating effects obtained in the present study. Sixteen out of one hundred and twelve mediation routes (14%) were significant.

8.4 Analysis of Longitudinal Moderating Effects

Hierarchical regression analyses (Cohen & Cohen, 1983) were conducted to investigate longitudinal moderating effects of optimism and Confucian work values at Time 2 between predictor variables at Time 1 and work-family conflict and enrichment at Time 2 while controlling for demographic and criterion variables at Time 1. These analyses consisted of four steps. Demographic variables associated with work-family conflict or enrichment were entered in the first step. For the hierarchical regression equation of work-family conflict, gender and age were control variables were significantly associated with work-family conflict, and therefore they were entered in the first step of this

equation. For the hierarchical regression equation of work-family-enrichment, age, marital status, educational level, tenure in the company, occupational tenure, and job rank were control variables were significantly related to work-family enrichment, and accordingly they were entered in the first step of this equation. Secondly, work-family conflict and enrichment at Time 1 were entered. Thirdly, predictor variables at Time 1, optimism at Time 2, and Confucian work values at Time 2 were entered. In the fourth step, interaction terms between the predictor variables at Time 1 and the moderator variables at Time 2 were entered. Before conducting the analyses, predictor and moderator variables were centred to address multicollinearity among those variables (Aiken & West, 1991).

Table 8.11 presents the results for longitudinal moderating effects of Confucian work values on work-to-family interference. These results indicated that there were no significant interaction terms between quantitative workload, organizational constraints, work-role conflict, the total working hours per week at Time 1 and Confucian work values (CGF and LEACH Factors) at Time 2. These findings indicate that Confucian work values (CGF and LEACH Factors) at Time 2 were not a significant moderator of the relationships between work demands, organizational constraints, work-role conflict at Time 1 and work-to-family interference at Time 2. Therefore, hypotheses 77, 78, and 79 were not supported.

Table 8.11 Hierarchical regression analyses for examining the longitudinal moderating effect of Confucian work values on work-to-family interference

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
GENDER[1]	-.08	-.05	-.04	-.04
AGE	.05	.05	.06	.06
Step 2:				
WFI1	--	.42***	.34***	.36***
Step 3:				
QW1	--	--	.04	.04
OC1	--	--	.05	.04
WRCON1	--	--	.22**	.21**
WHOURS1	--	--	.04	.04
CWVCGF2	--	--	.24**	.25**
CWVLEA2	--	--	-.10	-.11
Step 4:				
QW1 x CWVCGF2	--	--	--	.09
OC1 x CWVCGF2	--	--	--	-.04
WRCON1 x CWVCGF2	--	--	--	.10
WHOURS1 x CWVCGF2	--	--	--	.06
QW1 x CWVLEA2	--	--	--	.07
OC1 x CWVLEA2	--	--	--	-.01
WRCON1 x CWVLEA2	--	--	--	.01
WHOURS1 x CWVLEA2	--	--	--	-.09
Adjusted R^2	.00	.17	.23	.23
Adjusted R^2 Change	--	.17	.06	.00
F	.82	14.19***	6.64***	3.76***
df	2,186	3,185	9,179	17,171

Note. [1] *Male = 0, Female = 1, WFI1 = Work-to-Family Interference at Time 1 QW1 = Quantitative Workload at Time 1, OC1 = Organizational Constraints at Time 1, WRCON1 = Work-Role Conflict at Time 1, WHOURS1 = Total Working Hours per Week at Time 1, CWVCGF2 = Confucian work values (CGF Factor) at Time 2, CWVLEA2 = Confucian work values (LEACH Factor) at Time 2*
** p < .05, ** P < .01, *** P < .001*

Table 8.12 shows the results for longitudinal moderating effects of optimism on family-to-work interference. The results (step 4) indicate that one out of four interaction terms was significant. Four interaction terms explained 1% of the variance in family-to-work inference at Time 2, but only the interaction term of family-role conflict at Time 1 and optimism at Time 2 was significant. In other words, optimism at Time 2 was a moderator of the relationship between family-role conflict at Time 1 and family-to-work interference at Time 2. This longitudinal moderating effect is further described on page 216. However, Table 8.12 shows that interaction terms between family workload, the total working hours in family per week, the total number of dependent at Time 1 and optimism at Time 2 were not significant. These results illustrated that optimism was not a consistent longitudinal moderator of the relationships between family demands and family-to-work interference. Therefore, hypothesis 67 was not supported.

Tables 8.13, 8.14 and 8.15 show the longitudinal moderating effects of Confucian work values on work-to-family facilitation. The results indicate that there were no significant interaction terms between supervisor support and perceived organisational support at Time 1, and Confucian work values (CGF and LEACH Factors) at Time 2. They imply that Confucian work values (CGF and LEACH Factors) were not a significant longitudinal moderator of the relationships between supervisor support, perceived organisational support, and work-to-family facilitation. Hypotheses 80 and 81 were not supported. In addition, Tables 8.13 and 8.15 also show that Confucian work values (CGF and LEACH Factor) were not significant longitudinal moderators of the relationships between work control and work-to-family facilitation (Development and Capital).

Table 8.12 Hierarchical regression analyses for examining the longitudinal moderating effect of optimism on family-to-work interference

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
GENDER[1]	-.21**	-.18**	-.21**	-.21**
AGE	.10	.09	.09	.09
Step 2:				
FWI1	--	.36***	.34***	.31***
Step 3:				
FMWORK1	--	--	.11	.11
FRCON1	--	--	.20*	.20*
FHOURS1	--	--	.05	.05
DEPEND1	--	--	.02	.01
OPT2	--	--	-.10	-.10
Step 4:				
FMWORK1 x OPT2	--	--	--	-.04
FRCON1 x OPT2	--	--	--	-.16*
FHOURS1 x OPT2	--	--	--	-.10
DEPEND1 x OPT2	--	--	--	.00
Adjusted R^2	.05	.16	18	.19
Adjusted R^2 Change	--	.11	.02	.01
F	6.49**	14.83***	6.09***	4.34***
df	2,186	3,185	8,180	12,176

Note.[1] Male = 0, Female = 1, FWI1 = Family-to=Work Interference at Time 1, FMWORK1 = Family Workload at Time 1, FRCON1 = Family-Role Conflict at Time 1, FHOURS1 = Total Working Hours in Family per Week at Time 1, DEPEND = Total Number of Dependents at Time 1, OPT = Optimism at Time 2

** p < .05, ** p < .01, *** p < .001*

Table 8.13 Hierarchical regression analyses for examining the longitudinal moderating effect of Confucian work values on work-to-family facilitation (Development)

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
AGE	.18*	.22*	.24*	.26*
MARITAL[1]	.00	.05	.06	.09
EDU	-.10	-.10	-.09	-.10
CTENURE	.00	.02	.03	.05
OTENURE	.07	.02	-.02	-.06
POSITION	.01	.02	.05	.03
Step 2:				
WFFD1	--	.35***	.35***	.36***
Step 3:				
SFS1	--	--	.07	.07
POS1	--	--	.06	.08
WC1	--	--	.06	.07
CWVCGF2	--	--	.10	.10
CWVLEA2	--	--	.11	.12
Step 4:				
SFS1 x CWVCGF2	--	--	--	.08
POS 1x CWVCGF2	--	--	--	.05
WC1 x CWVCGF2	--	--	--	-.09
SFS1 x CWVLEA2	--	--	--	.06
POS1 x CWVLEA2	--	--	--	.07
WC1 x CWVLEA2	--	--	--	.03
Adjusted R^2	.05	.17	.17	.17
Adjusted R^2 Change	--	.12	.00	.01
F	2.83*	6.50***	4.45***	3.23***
df	6,176	7,175	12,170	18,164

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, WFFD1 = Work-to-Family Facilitation (Development) at Time 1, SFS1 = Supervisor support at Time 1, POS1 = Perceived Organizational Support at Time 1, WC1 = Work Control at Time 1, CWVCGF2 = Confucian work values (CGF Factor) at Time 2, CWVLEA2 = Confucian work values (LEACH Factor) at Time 2

** p < .05, ** P < .01, *** P < .001*

Table 8.14 Hierarchical regression analyses for examining the longitudinal moderating effect of Confucian work values on work-to-family facilitation (Affect)

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
AGE	.11	.12	.11	.10
MARITAL[1]	-.10	-.11	-.12	-.09
EDU	-.19*	-.19*	-.20*	-.19*
CTENURE	-.08	-.05	-.03	-.03
OTENURE	-.04	-.05	-.06	-.08
POSITION	-.04	-.03	-.01	-.04
Step 2:				
WFFA1	--	.23**	.21**	.18*
Step 3:				
SFS1	--	--	.04	.02
POS1	--	--	.09	.09
WC1	--	--	.20*	.20*
CWVCGF2	--	--	-.08	-.09
CWVLEA2	--	--	.19*	.17*
Step 4:				
SFS1 x CWVCGF2	--	--	--	-.03
POS 1x CWVCGF2	--	--	--	.00
WC1 x CWVCGF2	--	--	--	-.04
SFS1 x CWVLEA2	--	--	--	.06
POS1 x CWVLEA2	--	--	--	.01
WC1 x CWVLEA2	--	--	--	.16*
Adjusted R^2	.08	.12	.15	.16
Adjusted R^2 Change	--	.04	.03	.01
F	3.71***	5.94***	4.38***	3.15***
df	6,176	7,175	12,170	18,164

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, WFFA1 = Work-to-Family Facilitation (Affect) at Time 1, SFS1 = Supervisor support at Time 1, POS1 = Perceived Organizational Support at Time 1, WC1 = Work Control at Time 1, CWVCGF2 = Confucian work values (CGF Factor) at Time 2, CWVLEA2 = Confucian work values (LEACH Factor) at Time 2

** p < .05, ** P < .01, *** P < .001*

Table 8.15 Hierarchical regression analyses for examining the longitudinal moderating effect of Confucian work values on work-to-family facilitation (Capital)

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
AGE	.07	.00	.00	.03
MARITAL[1]	.09	.07	-.06	-.02
EDU	-.16*	-.16*	-.16*	-.18*
CTENURE	.02	.03	.06	.06
OTENURE	-.01	-.01	-.03	-.05
POSITION	-.06	-.05	-.02	-.05
Step 2:				
WFFC1	--	.34***	.30***	.30***
Step 3				
SFS1	--	--	.00	.00
POS1	--	--	.08	.10
WC1	--	--	22**	.21**
CWVCGF2	--	--	-.01	-.04
CWVLEA2	--	--	.18*	.15*
Step 4:				
SFS1 x CWVCGF2	--	--	--	-.02
POS 1x CWVCGF2	--	--	--	.01
WC1 x CWVCGF2	--	--	--	-.10
SFS1 x CWVLEA2	--	--	--	-.05
POS1 x CWVLEA2	--	--	--	.07
WC1 x CWVLEA2	--	--	--	.03
Adjusted R^2	.02	.12	17	.17
Adjusted R^2 Change	--	.10	.05	.00
F	2.23**	5.86***	4.14***	3.02***
df	6,176	7,175	12,170	18,164

Note. [1] Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, WFFC1 = Work-to-Family Facilitation (Affect) at Time 1, SFS1 = Supervisor support at Time 1, POS1 = Perceived Organizational Support at Time 1, WC1 = Work Control at Time 1, CWVCGF2 = Confucian work values (CGF Factor) at Time 2, CWVLEA2 = Confucian work values (LEACH Factor) at Time 2

** p < .05, ** P < .01, *** P < .001*

However, Table 8.14 (step 4) indicates that six interaction terms explained 1% of the variance in the work-to-family facilitation (Affect) at Time 2, but only the interaction term between work control at Time 1 and Confucian work values (LEACH Factor) at Time 2 was significant. In other words, Confucian work values (LEACH Factor) was a longitudinal moderator of the relationship between work control and work-to-family facilitation (Affect). This longitudinal moderating effect is further described in the next section of this chapter (page 217).

Tables 8.16, 8.17 and 8.18 present the longitudinal moderating effects of optimism on family-to-work facilitation. All interaction terms between family support and family control at Time 1, and optimism at Time 2 were not significant. These findings indicate that optimism was not a significant longitudinal moderator between family support and family control, and family-to-work facilitation. Hypotheses 69 and 70 were not supported.

8.5 Graphs of Significant Interaction Terms

The significant interaction terms from Table 8.12 (page 208) and 8.14 (page 210) were plotted to show their moderating effects. Similar to chapter 6 and 7, the interactions between low optimism at Time 2 (that is, -1 *SD* below the sample mean), high optimism at Time 2 (that is, +1 *SD* above the sample mean), low family-role conflict at Time 1 (that is, -1 *SD* below the sample mean) and high family-role conflict at Time 1 (that is, -1 *SD* above the sample mean) were plotted on family-to-work interference at Time 2. The same procedure was also adopted to plot the longitudinal moderating effect of Confucian work values (LEACH Factor) at Time 2 in the relationship between work control at Time 1 and work-to-family facilitation (Affect) at Time 2.

Table 8.16 Hierarchical regression analyses for examining the longitudinal moderating effect of optimism on family-to-work facilitation (Development)

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
AGE	.26**	.23*	.22*	.22*
MARITAL[1]	.03	.00	.00	.00
EDU	.00	-.01	-.01	-.01
CTENURE	-.06	-.07	-.06	-.06
OTENURE	-.04	-.01	-.04	-.05
POSITION	.04	.03	.03	.04
Step 2:				
FWFD1	--	.22**	.20**	.20**
Step 3:				
FMSUPT1	--	--	.07	.07
FMCONT1	--	--	.03	.03
OPT2	--	--	.12	.12
Step 4:				
FMSUPT1 x OPT2	--	--	--	.00
FMCONT1 x OPT2	--	--	--	.05
Adjusted R^2	.01	.06	.06	.06
Adjusted R^2 Change	--	.05	.00	.00
F	1.42	2.57*	2.15*	1.82*
df	6,176	7,175	10,172	12,170

Note. [1] *Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FWFD1 = Family-to-Work Facilitation (Development) at Time 1, FMSUPT1 = Family Support at Time 1, FMCONT1 = Family Control at Time 1, OPT2 = Optimism at Time 2*

** p < .05, ** P < .01, *** P < .001*

Table 8.17 Hierarchical regression analyses for examining the longitudinal moderating effect of optimism on family-to-work facilitation (Affect)

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
AGE	.10	.08	.06	.05
MARITAL[1]	-.10	-.10	-.10	-.10
EDU	.04	.07	.02	.02
CTENURE	-.03	-.07	-.05	-.05
OTENURE	.06	.09	.04	.04
POSITION	-.01	-.02	-.02	-.02
Step 2:				
FWFD1	--	.21**	.22**	.22**
Step 3:				
FMSUPT1	--	--	.10	.10
FMCONT1	--	--	.21**	.21**
OPT2	--	--	.27***	.26**
Step 4:				
FMSUPT1 x OPT2	--	--	--	.00
FMCONT1 x OPT2	--	--	--	.07
Adjusted R^2	.02	.06	.14	.14
Adjusted R^2 Change	--	.04	.08	.00
F	1.80	2.83**	3.74***	3.10***
df	6,176	7,175	10,172	12,170

Note. [1] *Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FWFD1 = Family-to-Work Facilitation (Affect) at Time 1, FMSUPT = Family Support at Time 1, FMCONT = Family Control at Time 1, OPT = Optimism at Time 2*

** p < .05, ** P < .01, *** P < .001*

Table 8.18 Hierarchical regression analyses for examining the longitudinal moderating effect of optimism on family-to-work facilitation (Capital)

Predictor Variables	***β***	***β***	***β***	***β***
Step 1:				
AGE	.12	.11	.12	.12
MARITAL[1]	-.06	-.02	-.02	-.02
EDU	.04	.03	.03	.03
CTENURE	-.10	-.09	-.08	-.08
OTENURE	.05	.07	.02	.02
POSITION	.01	.02	.02	.02
Step 2:				
FWFD1	--	.32***	.31***	.31***
Step 3:				
FMSUPT1	--	--	.10	.10
FMCONT1	--	--	.05	.03
OPT2	--	--	.26***	.24**
Step 4:				
FMSUPT1 x OPT2	--	--	--	.02
FMCONT1 x OPT2	--	--	--	.02
Adjusted R^2	.02	.11	.16	.16
Adjusted R^2 Change	--	.09	.05	.00
F	1.61	4.44***	4.69***	3.87***
df	6,176	7,175	10,172	12,170

Note. [1] *Married/Cohabiting = 0, Unmarried/Separated = 1, EDU = Educational Level, CTENURE = Tenure in the Company, OTENURE = Occupational Tenure, POSITION = Job Rank, FWFD1 = Family-to-Work Facilitation (Capital) at Time 1, FMSUPT1 = Family Support at Time 1, FMCONT1 = Family Control at Time 1, OPT2 = Optimism at Time 2*

** p < .05, ** P < .01, *** P < .001*

As suggested by Aiken and West (1991), simple slopes analyses were conducted to assess the significance of those moderating effects. Statistical programmes for testing two-way interaction effects and simple slopes analyses, provided in the website (http://www.jeremydawson.co.uk/slopes.htm), were used to complete the above tasks.

Figure 8.11 indicates that optimism at Time 2 buffered the effect of family-role conflict at Time 1 on family-to-work interference at Time 2. When family-role conflict at Time 1 was low, participants with low and high optimism at Time 2 perceived similar levels of family-to-work interference at Time 2. However, participants with high optimism at Time 2 reported less family-to-work interference than those with low optimism at Time 2 when family-role conflict at Time 1 was high. Simple slopes analyses also found that there was a significant difference between the slopes of low optimism and high optimism at Time 2 (t-value: -2.31, $p < .05$). Accordingly, optimism at Time 2 was a significant moderator of the relationship between family workload at Time 1 and family-to-work interference at Time 2, and hypothesis 68 was supported.

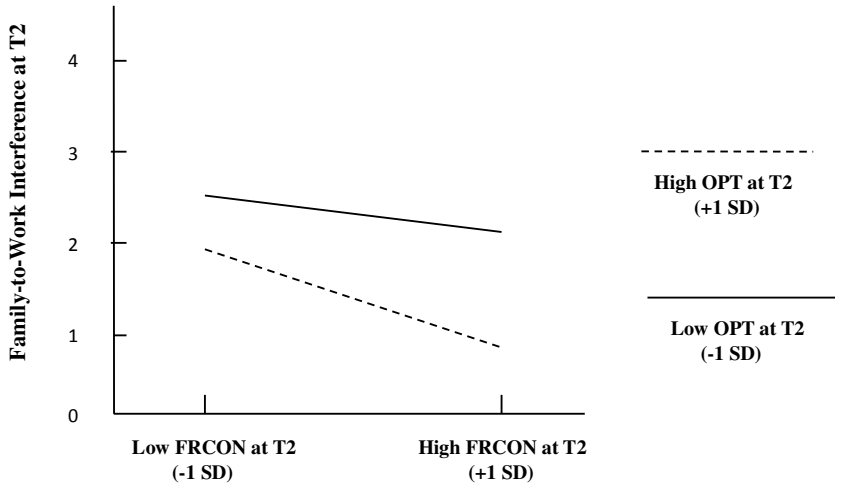


Figure 8.11 Longitudinal moderating effect of optimism (OPT) at Time 2 on the relationship between family-role conflict (FRCON) at Time 1 and family-to-work interference at Time 2

Figure 8.12 shows that Confucian work values (LEACH Factor) at Time 2 intensified the effect of work control at Time 1 on work-to-family facilitation (Affect) at Time 2. When work control at Time 1 was low, participants with low and high Confucian work values (LEACH Factor) at Time 2 reported similar

levels of work-to-family facilitation (Affect) at Time 2. However, participants with high Confucian work values (LEACH Factor) at Time 2 perceived higher work-to-family facilitation (Affect) than their counterparts with low Confucian work values (LEACH Factor) at Time 2 when work control at Time 1 was high. Simple slopes analyses found that there was a significant difference between the slopes of low and high Confucian work values (LEACH Factor) at Time 2 (t-value: 2.45, $p < .05$). Therefore, Confucian work values (LEACH Factor) at Time 2 were a significant moderator of the relationship between work control at Time 1 and work-to-family facilitation (Affect) at Time 2. Hypothesis 82 was partially supported because results in Table 8.14 and 8.16 showed that interaction terms of work control and Confucian work values (CGF and LEACH Factors) were not significant in relation to work-to-family facilitation (Development and Capital).

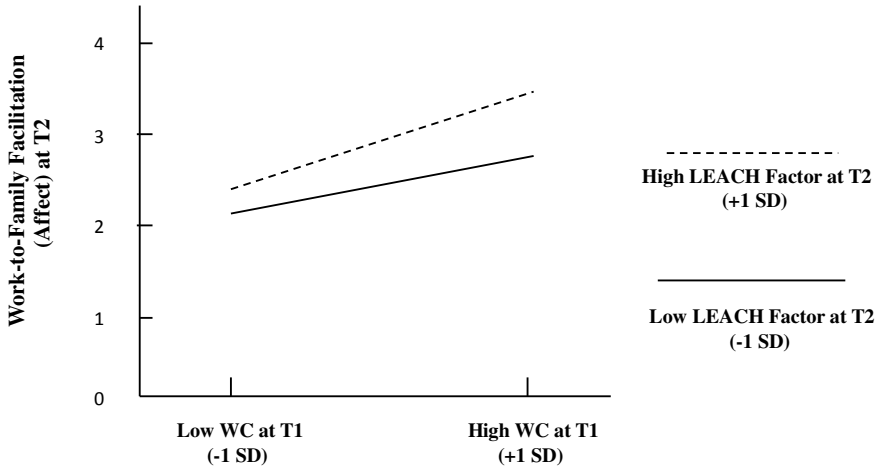


Figure 8.12 Longitudinal moderating effect of Confucian work values (LEACH Factor) at Time 2 on the relationship between work control (WC) at Time 1and work-to-family facilitation (Affect) at Time 2

The above results show that the longitudinal moderating effect of optimism was obtained in one out of four analyses, whereas the longitudinal moderating effect of Confucian work values was found in one out of eight analyses.

8.6 Chapter Summary

This chapter has described the results of longitudinal analyses at Time 1 and Time 2. Table 8.19 summarises the results of longitudinal hypotheses testing. The letter "F" refers to hypotheses which were fully supported. "P" refers to hypotheses which were partially supported, and "N" refers to hypotheses which were not supported. In support of my longitudinal correlational hypotheses, work predictors were significantly related to work-to-family interference and facilitation over time. Family predictors were significantly related to family-to-work interference and facilitation over time.

Work-to-family interference and family-to-work interference were longitudinally related to poor physical and psychological health. Work-to-family interference was negatively associated with family satisfaction over time. Family-to-work interference was related to lower work productivity over time.

Work-to-family facilitation was longitudinally associated with lower physical symptoms and psychological strain, but positively related to family satisfaction over time. Family-to-work facilitation was also longitudinally associated with decreased psychological strain and increased work productivity.

There were very few longitudinal mediating effects obtained in the present study. Sixteen out of one hundred and twelve mediation routes (14%) were significant. Work-to-family interference longitudinally mediated the effect of work predictor on physical and psychological health, and family-to-work interference also mediated the effect of family predictor on psychological health and work productivity over time. Work-to-family facilitation longitudinally mediated the effect of work predictor on psychological health and family satisfaction, and family-to-work facilitation also mediated the effect of family predictor on psychological health and work productivity over time.

Table 8.19 Summary of longitudinal hypotheses testing results

Hypotheses	Result
4. Work demands at Time 1 will be positively related to work-to-family interference at Time 2.	F
5. Work-role conflict Time 1 will be positively related to work-to-family interference at Time 2.	F
6. Organisational constraints at Time 1 will be positively related to work-to-family interference at Time 2.	F
9. Family demands at Time 1 will be positively related to family-to-work interference at Time 2.	P
10. Family-role conflict at Time 1 will be positively related to family-to-work interference at Time 2.	F
16. Work-to-family interference at Time 1 will be positively associated with physical health symptoms at Time 2.	F
17. Family-to-work interference at Time 1 will be positively associated with physical health symptoms at Time 2.	F
18. Work-to-family interference at Time 1 will be positively associated with psychological strain at Time 2.	P
19. Family-to-work interference at Time 1 will be positively associated with psychological strain at Time 2.	P
20. Work-to-family interference at Time 1 will be negatively associated with family satisfaction at Time 2.	F
24. Family-to-work interference at Time 1 will be negatively related to work performance at Time 2.	P
25. Family-to-work interference at Time 1 will be negatively associated with organisational citizenship behaviours at Time 2.	F
26. Family-to-work interference at Time 1 will be positively associated with counterproductive workplace behaviours at Time 2.	P
30. Supervisor support at Time 1 will be positively related to work-to-family facilitation at Time 2.	P
31. Perceived organisational support at Time 1 will be positively related to work-to-family facilitation at Time 2.	P
32. Work control at Time 1 will be positively related to work-to-family facilitation at Time 2.	F
35. Family support at Time 1 will be positively associated with family-to-work facilitation at Time 2.	P
36. Family control at Time 1 will be positively associated with family-to-work facilitation at Time 2.	P
42. Work-to-family facilitation at Time 1 will be negatively related to physical health symptoms at Time 2.	P
43. Family-to-work facilitation at Time 1 will be negatively related to physical health symptoms at Time 2.	N
44. Work-to-family facilitation at Time 1 will be negatively associated with psychological strain at Time 2.	P
45. Family-to-work facilitation at Time 1 will be negatively related to psychological strain at Time 2.	P

Table 8.19 (continued)

Hypotheses	Result
46. Work-to-family facilitation at Time 1 will be positively associated with family satisfaction at Time 2.	P
50. Family-to-work facilitation at Time 1 will be positively related to work performance at Time 2.	P
51. Family-to-work facilitation at Time 1 will be positively associated with organisational citizenship behaviours at Time 2.	F
52. Family-to-work facilitation at Time 1 will be negatively related to counterproductive workplace behaviours.	P
53a. Work-to-family interference at Time 2 will mediate the effects of work demands at Time 1 on physical health symptoms at Time 2.	N
53b. Work-to-family interference at Time 2 will mediate the effects of work demands at Time 1 on psychological strain at Time 2.	N
53c. Work-to-family interference at Time 2 will mediate the effects of work demands at Time 1 on family satisfaction at Time 2.	N
54a. Work-to-family interference at Time 2 will mediate the effects of work-role conflict at Time 1 on physical health symptoms at Time 2.	F
54b. Work-to-family interference at Time 2 will mediate the effects of work-role conflict at Time 1 on psychological strain at Time 2.	P
54c. Work-to-family interference at Time 2 will mediate the effects of work-role conflict at Time 1 on family satisfaction at Time 2.	N
55a. Work-to-family interference at Time 2 will mediate the effects of organisational constraints at Time 1 on physical health symptoms at Time 2.	N
55b. Work-to-family interference at Time 2 will mediate the effects of organisational constraints at Time 1 on psychological strain at Time 2.	N
55c. Work-to-family interference at Time 2 will mediate the effects of organisational constraints at Time 1 on family satisfaction at Time 2.	N
56a. Family-to-work interference at Time 2 will mediate the effects of family demands at Time 1 on physical health symptoms at Time 2.	N
56b. Family-to-work interference at Time 2 will mediate the effects of family demands at Time 1 on psychological strain at Time 2.	N
56c. Family-to-work interference at Time 2 will mediate the effects of family demands at Time 1 on work performance at Time 2.	N
56d. Family-to-work interference at Time 2 will mediate the effects of family demands at Time 1 on organisational citizenship behaviours at Time 2.	N
56e. Family-to-work interference at Time 2 will mediate the effects of family demands at Time 1 on counterproductive workplace behaviours at Time 2.	N
57a. Family-to-work interference at Time 2 will mediate the effects of family-role conflict at Time 1 on physical health symptoms at Time 2.	F
57b. Family-to-work interference at Time 2 will mediate the effects of family-role conflict at Time 1 on psychological strain at Time 2.	F
57c. Family-to-work interference at Time 2 will mediate the effects of family-role conflict at Time 1 on work performance at Time 2.	F
57d. Family-to-work interference at Time 2 will mediate the effects of family-role conflict at Time 1 on organisational citizenship behaviours at Time 2.	N

Table 8.19 (continued)

Hypotheses	Result
57e. Family-to-work interference at Time 2 will mediate the effects of family-role conflict at Time 1 on counterproductive workplace behaviours at Time 2.	F
58a. Work-to-family facilitation at Time 2 will mediate the effects of supervisor support at Time 1 on physical health symptoms at Time 2.	N
58b. Work-to-family facilitation at Time 2 will mediate the effects of supervisor support at Time 1 on psychological strain at Time 2.	N
58c. Work-to-family facilitation at Time 2 will mediate the effects of supervisor support at Time 1 on family satisfaction at Time 2.	N
59a. Work-to-family facilitation at Time 2 will mediate the effects of perceived organisational support at Time 1 on physical health symptoms at Time 2.	N
59b. Work-to-family facilitation at Time 2 will mediate the effects of perceived organisational support at Time 1 on psychological strain at Time 2.	N
59c. Work-to-family facilitation at Time 2 will mediate the effects of perceived organisational support at Time 1 on family satisfaction at Time 2.	N
60a. Work-to-family facilitation at Time 2 will mediate the effects of work control at Time 1 on physical health symptoms at Time 2.	P
60b. Work-to-family facilitation at Time 2 will mediate the effects of work control at Time 1 on psychological strain at Time 2.	N
60c. Work-to-family facilitation at Time 2 will mediate the effects of work control at Time 1 on family satisfaction at Time 2.	P
61a. Family-to-work facilitation at Time 2 will mediate the effects of family support at Time 1 on physical health symptoms at Time 2.	N
61b. Family-to-work facilitation at Time 2 will mediate the effects of family support at Time 1 on psychological strain at Time 2.	N
61c. Family-to-work facilitation at Time 2 will mediate the effects of family support at Time 1 on work performance at Time 2.	N
61d. Family-to-work facilitation at Time 2 will mediate the effects of family support at Time 1 on organisational citizenship behaviours at Time 2.	N
61e. Family-to-work facilitation at Time 2 will mediate the effects of family support at Time 1 on counterproductive workplace behaviours at Time 2.	N
62a. Family-to-work facilitation at Time 2 will mediate the effects of family control at Time 1 on physical health symptoms at Time 2.	N
62b. Family-to-work facilitation at Time 2 will mediate the effects of family control at Time 1 on psychological strain at Time 2.	P
62c. Family-to-work facilitation at Time 2 will mediate the effects of family control at Time 1 on work performance at Time 2.	N
62d. Family-to-work facilitation at Time 2 will mediate the effects of family control at Time 1 on organisational citizenship behaviours at Time 2.	P
62e. Family-to-work facilitation at Time 2 will mediate the effects of family control at Time 1 on counterproductive workplace behaviours at Time 2.	N

Table 8.19 (continued)

Hypotheses	Result
67. The positive relationship between family demands at Time 1 and family-to-work interference at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will reduce the effects of family demands at Time 1 on family-to-work interference at Time 2.	N
68. The positive relationship between family-role conflict at Time 1 and family-to-work interference at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will reduce the effects of family-role conflict at Time 1 on family-to-work interference at Time 2.	F
69. The positive relationship between family support at Time 1 and family-to-work facilitation at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will increase the effects of family support at Time 1 on family-to-work facilitation at Time 2.	N
70. The positive relationship between family control at Time 1 and family-to-work facilitation at Time 2 will be moderated by optimism at Time 2. That is, high levels of optimism at Time 2 will increase the effects of family support at Time 1 on family-to-work facilitation at Time 2.	N
77. The positive relationship between work demands at Time 1 and work-to-family interference at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will reduce the effects of work demands at Time 1 on work-to-family interference at Time 2.	N
78. The positive relationship between work-role conflict at Time 1 and work-to-family interference at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will reduce the effects of work-role conflict at Time 1 on work-to-family interference at Time 2.	N
79. The positive relationship between organizational constraints at Time 1 and work-to-family interference at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will reduce the effects of organizational constraints at Time 1 on work-to-family interference at Time 2.	N
80. The positive relationship between supervisor support at Time 2 and work-to-family facilitation at Time 1 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will increase the effects of supervisor support at Time 1 on work-to-family facilitation at Time 2.	N
81. The positive relationship between perceived organisational support at Time 1 and work-to-family facilitation at Time 2 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will increase the effects of perceived organisational support at Time 1 on work-to-family facilitation at Time 2.	N

Table 8.19 (continued)

Hypotheses	Result
82. The positive relationship between work control at Time 2 and work-to-family facilitation at Time 1 will be moderated by Confucian work values at Time 2. That is, high levels of Confucian work values at Time 2 will increase the effects of work control at Time 1 on work-to-family facilitation at Time 2.	P

Note. F = Fully Supported, P = Partially Supported, N = Not Supported

There were two significant longitudinal moderating effects obtained in twelve analyses (17%). Optimism longitudinally increased the positive relationship between the family predictor and family-to-work interference. Confucian work values (LEACH Factor) longitudinally intensified the positive relationships between the work predictor and work-to-family facilitation. However, optimism was not a longitudinal moderator of the relationships between family predictors and family-to-work facilitation. Confucian work values were also not a longitudinal moderator of the relationships between work predictors and work-to-family interference.

The possible explanations and implications of the findings are discussed in Chapter 9. Limitations and contributions of the present study are also mentioned, along with suggestions for future research.

CHAPTER 9

DISCUSSION AND CONCLUSION

This study explored a model of work-family conflict and enrichment for Hong Kong employees. These employees commonly agree that work-family balance is important for them, but it is difficult to balance work and family lives (Mahtani, 2006). In order to achieve work-family balance for those employees, it is necessary to understand which factors significantly affect work-family conflict and enrichment, and how work-family conflict and enrichment affect their well-being and work productivity.

Based on the model of work-family conflict summarised by O'Driscoll et al. (2006), the present model hypothesised that work demands, organisational constraints, work-role conflict, family demands and family-role conflict would be related to work-family conflict. The model also suggested that work support, work control, family support and family control would be associated with work-family enrichment. In addition, work-family conflict and enrichment would be related to family satisfaction, physical health symptoms, psychological strain, work performance, organisational citizenship behaviours and counterproductive workplace behaviours.

Optimism and Confucian work values were also hypothesised to moderate the relationships between work and family predictors, and work-family conflict and enrichment. Furthermore, work-family conflict and enrichment would mediate the effects of work and family predictors on criterion variables. A sample of full-time employees enrolled in part-time diploma, undergraduate or postgraduate psychology programmes from different universities in Hong Kong was used to examine the theoretical model of the present study.

This chapter summarises the findings of this study. Possible explanations and implications of the findings are discussed. Limitations and contributions of this study are covered, along with suggestions for future research.

9.1 Research Instruments

Confirmatory factor analysis (CFA) showed acceptable fit statistics, and confirmed the factor structure of research measures. These measures also achieved acceptable levels of reliability. However, organisational constraints, family support, physical symptoms, self-rated work performance, organizational citizenship behaviours and counterproductive workplace behaviours measures were not included in the CFA and reliability analysis because items in these measures reflected distinct elements. Concepts of internal consistency and factor structure were not applicable to these variables (Gravetter & Forzano, 2012).

9.2 Research Design

The present study adopted a two-wave panel method for data collection because this method was appropriate to examine longitudinal hypotheses. Correlational and moderation hypotheses were cross-sectionally and longitudinally tested. However, this study only tested the longitudinal mediation hypotheses because the mediating effects of work-family conflict and enrichment over time were rarely examined in previous Chinese studies. Self-report surveys were conducted at two time periods, with a time lag of ten months. After removing the outliers, 509 participants were retained at Time 1, and 208 participants who matched with Time 1 participants were retained at Time 2 for further analyses.

9.3 Correlational Findings

9.3.1 Relationships between Predictor Variables and Work-Family Conflict

Table 9.1 summarises the correlations between predictor variables and work-family conflict. Most of the predictor variables were positively correlated with work-to-family interference at Time 1 and Time 2. Similar results were also obtained in the longitudinal analysis. The results were generally consistent in the cross-sectional and longitudinal analyses, suggesting that work demand and work-role conflict may have both cross-sectional and longitudinal effects on work-to-family interference. The findings also illustrate that predictor variables in work domain were related to work-to-family interference, whereas predictor variables in family domain were associated with family-to-work interference in the Chinese context. They generally support the source attribution perspective that individuals may perceive work-family conflict in one domain (e.g. work domain) when their roles are negatively threatened by the source of the conflict in the same domain (Shockley & Singla, 2011).

As stated in Chapter 1, many enterprises in Hong Kong have undertaken several reforms (e.g. personnel re-allocation) since the economic downturn in the last two decades, but these reforms have created various organisational constraints, including a shortage of manpower and poor equipment or supplies. This problem directly increases employees' workload, and also may inhibit employees' performance in the workplace (Wong, 2005). Furthermore, employees with higher work-role conflict are required to fulfill two or more sets of requirements (Boyar et al., 2008), which in turn may also increase levels of work demands (Bellavia & Frone, 2005; Boyar et al., 2008). In order to deal with the above work problems, these employees may invest extra time and effort at work, and accordingly they may not have enough time and energy for their family duties.

Table 9.1 Summary of the correlations between predictor variables and work-family conflict

Predictor Variables	Time 1 (N = 509)		Time 2 (N = 208)		Longitudinal	
	WFI	**FWI**	**WFI**	**FWI**	**WFI**	**FWI**
Quantitative Workload	√		√		√	
Total Working Hours per Week	√		√		√	
Organisational Constraints	√		√		√	
Work-Role Conflict	√		√		√	
Family Workload		√		√		
Total Working Hours in Family per Week		√				
Total Number of Dependents		√		√		√
Family-Role Conflict		√		√		√

√ indicates the relationship is significant at least p < .05. WFI = Work-to-Family Interference; FWI = Family-to-Work Interference

Most of the predictor variables were positively correlated with family-to-work interference at Time 1, but only family workload and the total number of dependents and family-role conflict were positively correlated with family-to-work interference at Time 2. Furthermore, the total number of dependents and family-role conflict were positively correlated with family-to-work interference over time. These results were generally consistent between the cross-sectional and longitudinal analyses. Family demands and family-role conflict may have cross-sectional and longitudinal effects on increased family-to-work interference.

High levels of family demands can reduce the time spent at work by employees (Rothbard & Edwards, 2003). Madsen (2003) found that having more dependents will directly increase levels of perceived family responsibilities such as parental responsibility. Employees with higher family demands may need to invest extra time and energy in their family duties, which in turn may also result in lower participation in their work duties (Gutek et al, 1991). Furthermore,

family-role conflict is also suggested to increase levels of family demands because employees with higher family-role conflict may need to expend extra time and effort in dealing with different sets of expectations or requirements in family life (Boyar et al., 2008). Therefore, these employees may feel overloaded with family duties, which in turn may negatively affect their participation at work.

The results also indicate that gender was cross-sectionally and longitudinal associated with both work-to-family interference and family-to-work interference. Male employees tended to perceive higher work-to-family interference and family-to-work interference than females. Previously in Chinese families, husbands were required to work only outside the home, and they did not need to handle any family duties (Powell & Greenhaus, 2006). Nowadays, male employees are also required to handle family duties outside their working hours (Greenhaus, Callanan & Godshalk, 2000), but they perceive less support from others to tackle work and family problems when compared with female employees (Chan, 2007). Hong Kong male employees may perceive more work-family conflict than their female counterparts.

To conclude, the above results are consistent with related Western work-family findings, and they imply that potential factors of work-family conflict may be similar between Chinese and Western employees. These results can also be explained by previous Western research (e.g. Voydanoff , 2005) that employees cannot easily fulfill requirements in one role when they are overloaded by excessive demands in another role. Theories of work-family conflict developed in Western countries may be applicable for Hong Kong employees.

9.3.2 Relationships between Predictor Variables and Work-Family Enrichment

Table 9.2 summarises the correlations between predictor variables and work-family enrichment. Most of the predictor variables were positively

Table 9.2 Summary of the correlations between predictor variables and work-family enrichment

Time 1 (N = 509)						
Predictor Variables	**WFDEV**	**WFAFF**	**WFCAP**	**FWDEV**	**FWAFF**	**FWCAP**
Supervisor Support	√	√	√			
POS		√	√			
Work Control	√	√	√			
Family Support				√	√	√
Family Control					√	√
Time 2 (N = 208)						
Predictor Variables	**WFDEV**	**WFAFF**	**WFCAP**	**FWDEV**	**FWAFF**	**FWCAP**
Supervisor Support		√	√			
POS		√	√			
Work Control	√	√	√			
Family Support					√	√
Family Control					√	√
Longitudinal						
Predictor Variables	**WFDEV**	**WFAFF**	**WFCAP**	**FWDEV**	**FWAFF**	**FWCAP**
Supervisor Support		√	√			
POS			√			
Work Control	√	√	√			
Family Support					√	
Family Control					√	√

√ indicates the relationship is significant at least $p < .05$. POS = Perceived Organisational Support, WFDEV = Work-to-Family Facilitation (Development), WFAFF = Work-to-Family Facilitation (Affect), WFCAP = Work-to-Family Facilitation (Capital), FWDEV = Family-to-Work Facilitation (Development), FWAFF = Family-to-Work Facilitation (Affect), FWCAP = Family-to-Work Facilitation (Capital)

correlated with work-to-family facilitation at Time 1 and Time 2. Similar results were obtained in the longitudinal analysis. The findings were generally consistent in the cross-sectional and longitudinal analyses. Work support and work control may contribute cross-sectional and longitudinal effects on increased work-to-family facilitation.

A supportive environment provided by the organization, such as flexible work arrangements, can enhance employees' flexibility to participate in family

activities (Greenhaus & Parasuraman, 1999). Supervisor support is important for integration between work and family lives because it provides emotional support for employees to deal with the problems occurring between work and family roles (Aryee et al., 2005). In addition, work control allows employees to mobilise work resources (e.g. time) for solving family problems (Thompson & Prottas, 2005). These findings indicate that employees with high levels of supervisor support, organizational support or work control may perceive higher work-to-family facilitation.

Family support and family control were positively correlated with family-to-work facilitation at Time 1 and Time 2, and over time. Family support and family control may contribute both cross-sectional and longitudinal effects on increased family-to-work facilitation.

Family support is an important resource for tackling work strains and enhancing work performance among employees (Grzywacz & Marks, 2000; Halbesleben & Buckley, 2005). Similar to work control, family control may allow employees to master family resources for addressing problems at work (Shimada et al., 2010). These findings imply that employees with high levels of family support and control may perceive higher family-to-work facilitation.

To sum up, the above findings are consistent with related Western work-family findings, and they illustrate that potential factors of work-family enrichment may be similar between Chinese and Western employees. Furthermore, these results support the Conservation of Resources (COR) theory (Hobfall, 1989), and this theory suggests that individuals may experience lower conflict between work and family roles when they have better integration of work and family resources. Therefore, these people can have better health status and greater satisfaction in their work and family lives. Based on the above, related

theories of work-family enrichment developed in Western countries may be applicable for Hong Kong employees.

9.3.3 Relationships between Work-Family Conflict and Criterion Variables

Table 9.3 summarises the correlations between work-family conflict and criterion variables. Work-to-family interference and family-to-work interference were positively correlated with physical symptoms and psychological strain at Time 1 and Time 2, and in the longitudinal analysis. Work-family conflict may have negative cross-sectional and longitudinal effects on employees' physical and psychology well-being.

Previous studies (e.g. Hughes & Parkes, 2007) found that employees with high levels of work-family conflict are often required to invest extra time and effort for their excessive work demands, which in turn may result in poor recovery of physical health and high emotional exhaustion. Under this condition, employees' physical and psychological health may be negatively affected, which is consistent with the current findings.

Work-to-family interference was also cross-sectionally and longitudinally correlated with reduced family satisfaction. In other words, work-to-family interference may have negative cross-sectional and longitudinal effects on family satisfaction, which is consistent with other findings (e.g. Frye & Breaugh, 2004).

A potential explanation is that employees with high levels of work-to-family interference may not be able to effectively fulfill requirements of their family roles due to lower participation or involvement in the family domain. Therefore, family problems, such as arguments with family relatives, may be induced, which in turn negatively affect family satisfaction for those employees. The above findings are similar to previous Western work-family studies, and they also imply

Table 9.3 Summary of the correlations between work-family conflict and criterion variables

Time 1 (N = 509)							
Predictor Variables	**FS**	**PHYS**	**PSYSSD**	**PSYSAD**	**WP**	**OCB**	**CWB**
Work-to-Family Interference	√	√	√	√			
Family-to-Work Interference		√	√	√	√	√	√

Time 2 (N = 208)									
Predictor Variables	**FS**	**PHYS**	**PSYSSD**	**PSYSAD**	**WP**	**WPS**	**OCB**	**CWB**	**CWBS**
Work-to-Family Interference	√	√	√	√					
Family-to-Work Interference		√		√	√	√	√	√	√

Longitudinal									
Predictor Variables	**FS**	**PHYS**	**PSYSSD**	**PSYSAD**	**WP**	**WPS**	**OCB**	**CWB**	**CWBS**
Work-to-Family Interference	√	√		√					
Family-to-Work Interference		√		√	√		√	√	

√ indicates the relationship is significant at least p < .05. FS = Family Satisfaction, OCB = Organisational Citizenship Behaviours, WP = Self-Rated Work Performance, WPS = Supervisor-Rated Work Performance, PHYS = Physical Symptoms, PSYSSD = Psychological Strains (Social Dysfunction), PSYSAD = Psychological Strains (Anxiety/Depression), CWB = Self-Rated Counterproductive Workplace Behaviours, CWBS = Supervisor-Rated Counterproductive Workplace Behaviours

that work-family conflict may negatively affect individuals' physical and psychological well-being in the Chinese societies.

Table 9.3 also indicates that family-to-work interference was positively correlated with counterproductive workplace behaviours, and negatively associated with work performance and organizational citizenship behaviours at Time 1 and Time 2. Similar results were also obtained in the longitudinal

analysis. These results were generally consistent in the cross-sectional and longitudinal analyses. Family-to-work interference may have negative cross-sectional and longitudinal effects on employees' productivity at work.

Similar to work-to-family interference, employees with high levels of family-to-work interference are required to invest extra time and effort in their family issues, and this condition may also restrict employees from utilising physical and psychological resources for fulfilling requirements of their work roles (Rothbard, 2001), which in turn may also result in poor work performance and fewer organizational citizenship behaviours.

Furthermore, family-to-work interference is viewed as a work stressor, and is also positively associated with negative emotions experienced in the work domain (Goh, 2006; Tsai, 2008). When employees experience negative feelings at work, they may immediately and impulsively perform counterproductive workplace behaviours to the corresponding situations in order to reduce their negative feelings (Spector & Fox, 2002). Earlier studies (e.g. Anderson et al., 2010) have also shown that some forms of counterproductive workplace behaviours, such as absenteeism, could be induced by family responsibilities interfering with work. The above literature, therefore, may provide a further understanding of the positive relationship between family-to-work interference and counterproductive workplace behaviours obtained in this study.

The findings are consistent with related Western studies, and they also imply that work-family conflict may also negatively affect employees' work performance in the Chinese context. They also support previous Western literature (e.g. Frone, 2003; Frone et al., 1997) that each direction of conflict is associated with outcomes in the domain receiving the conflict. In addition, the present study was the first to examine the relationships between work-family

conflict, and organisational citizenship behaviours and counterproductive workplace behaviours for Hong Kong employees, and the current findings also show that the relationships between family-to-work interference, and organisational citizenship behaviours and counterproductive workplace behaviours were significantly supported. These results may extend the understanding of the negative effects of work-family conflict on employees' work behaviours in Hong Kong.

9.3.4 Relationships between Work-Family Enrichment and Criterion Variables

Table 9.4 summarises the correlations between work-family enrichment and criterion variables. The findings indicate that work-family enrichment might contribute positive effects on personal and work outcomes. In particular, work-family enrichment might have a positive effect on psychological well-being and organisational citizenship behaviours, cross-sectionally and longitudinally.

Work-to-family facilitation was negatively correlated with physical symptoms and psychological strain at Time 1 and Time 2. Family-to-work facilitation was negatively associated with psychological strain at Time 1 and Time 2. In addition, work-to-family facilitation was also negatively related to physical symptoms and psychological strain, and family-to-work facilitation was negatively associated with psychological strain over time. Although there were fewer significant cross-sectional correlations at Time 2 than Time 1, the current findings were fairly consistent in the cross-sectional and longitudinal analyses. Work-family enrichment may have positive cross-sectional and longitudinal effects on physical and psychological health.

Table 9.4 Summary of the correlations between work-family enrichment and criterion variables

Predictor	**Time 1 (N = 509)**							**Time 2 (N = 208)**								
Variables	**FS**	**PHYS**	**PSYSSD**	**PSYSAD**	**WP**	**OCB**	**CWB**	**FS**	**PHYS**	**PSYSSD**	**PSYSAD**	**WP**	**WPS**	**OCB**	**CWB**	**CWBS**
Work-to-Family Facilitation (Development)	√		√	√				√		√	√					
Work-to-Family Facilitation (Affect)	√	√	√	√					√		√					
Work-to-Family Facilitation (Capital)	√	√	√	√					√	√	√					
Family-to-Work Facilitation (Development)			√			√	√							√		
Family-to-Work Facilitation (Affect)			√	√	√	√	√			√	√		√	√		√
Family-to-Work Facilitation (Capital)			√	√	√	√	√			√	√		√	√		

Table 9.4 (continued)

Predictor Variables	Longitudinal								
	FS	**PHYS**	**PSYSSD**	**PSYSAD**	**WP**	**WPS**	**OCB**	**CWB**	**CWBS**
Work-to-Family Facilitation (Development)	√								
Work-to-Family Facilitation (Affect)		√		√					
Work-to-Family Facilitation (Capital)		√	√	√					
Family-to-Work Facilitation (Development)							√	√	
Family-to-Work Facilitation (Affect)			√	√	√	√	√	√	√
Family-to-Work Facilitation (Capital)			√			√	√	√	

√ indicates the relationship is significant at least p < .05. FS = Family Satisfaction, OCB = Organizational Citizenship Behaviours, WP = Self-Rated Work Performance, WPS = Supervisor-Rated Work Performance, PHYS = Physical Symptoms, PSYSSD = Psychological Strains (Social Dysfunction), PSYSAD = Psychological Strains (Anxiety/Depression), CWB = Self-Rated Counterproductive Workplace Behaviours, CWBS = Supervisor-Rated Counterproductive Workplace Behaviours

Employees with higher work-family enrichment may have high levels of perceived flexibility, which in turn allows them to effectively integrate work and family responsibilities (Carlson et al., 2010). Other findings (Casey & Grzywacz, 2008; Thomas & Ganster, 1995) showed that perceived flexibility was related to decreased stress and physical health complaints. Based on the above, employees with higher work-family enrichment may experience better physical and psychological well-being.

Work-to-family facilitation variables (Development, Affect and Capital) were positively related to family satisfaction at Time 1, but only work-to-family facilitation (Development) was positively correlated with family satisfaction at Time 2 and over time. These results illustrate that the correlation between work-to-family facilitation and family satisfaction at Time 1 was stronger than at Time 2, and the cross-sectional correlation was also stronger than the longitudinal correlation. Related studies found that the relationships between work-family enrichment and individuals' well-being (e.g. happiness) were consistently weaker when compared with the relationships between work-family conflict and individuals' well-being (Baumeister et al, 2001). These findings imply that positive experiences in work or family domains may not consistently provide influential effects on individuals' well-being.

However, employees with high levels of work-to-family facilitation will perceive that their work is beneficial to their family life, and this may enable them to successfully deal with family problems (Hill, 2005). When these employees can obtain work support (e.g. flexible work policies) to handle their family duties (e.g. looking after the children), they may have more positive emotions at home, which in turn may facilitate more family satisfaction.

Family-to-work facilitation was negatively correlated with counterproductive workplace behaviours, but positively associated with work performance and organisational citizenship behaviours at Time 1 and Time 2. Furthermore, family-to-work facilitation was negatively associated with self-rated counterproductive workplace behaviours, and positively correlated with supervisor-rated work performance and organizational citizenship behaviours over time. These findings were not entirely consistent between Time 1 and Time 2, and the cross-sectional and longitudinal analyses. In particular, the relationship between family-to-work facilitation and self-rated work performance was slightly weaker than the relationship between family-to-work facilitation and supervisor-rated work performance in both cross-sectional and longitudinal analyses. However, the current results have shown that family-to-work facilitation may have positive cross-sectional and longitudinal effects on employees' performance and behaviours in the workplace.

Some researchers (e.g. Van Steenbergen et al., 2007) agreed that employees with high family-to-work facilitation may perceive more family resources and support to enhance their work performance. Other studies (e.g. Demerouti et al., 2010; Hammer et al., 2003) found that employees with enough family support and resources can effectively solve their personal problems, which in turn may facilitate their participation and productivity at work. Supported by the above findings, it is logical that employees with high family-to-work facilitation may have better work performance or more organizational citizenship behaviours, and fewer counterproductive workplace behaviours.

To conclude, the above findings are generally consistent with Western work-family studies, and they imply that work-family enrichment may contribute positive effects on employees' well-being and work performance in the Chinese

context. They also support previous Western studies (e.g. Frone, 2003; Frone et al., 1997) each direction of enrichment is related to outcomes in the domain receiving the enrichment. However, these findings indicate that work-family enrichment may provide stronger short term effects on family satisfaction, which in turn may extend the understanding of the relationships between work-family enrichment and family satisfaction for Chinese employees. The present study was also the first to assess the relationships between work-family enrichment, and organisational citizenship behaviours and counterproductive workplace behaviours. The current findings also show that the relationships between family-to-work facilitation, and organisational citizenship behaviours and counterproductive workplace behaviours were significantly supported. These results provide additional information of the positive effects of work-family enrichment on employees' work behaviours in Hong Kong.

9.4 Mediating Effects of Work-Family Conflict

Based on the discussion in Chapter 3, the longitudinal mediating effects of work-family conflict in the relationships between predictor and criterion variables were explored in this study. Longitudinal mediating effects of work-to-family interference were only found in two out of sixteen mediation paths, and longitudinal mediating effects of family-to-work interference were obtained in five out of twenty four mediation paths. Hence, the present study obtained very few significant longitudinal mediating effects. Many of the hypothesised mediating effects of work-family conflict were not significant.

A potential reason is that the time lag of ten months might be too long, and therefore the effects of predictor variables at Time 1 on work-family conflict at Time 2 were dissipated. Although this time lag was supported by previous studies (e.g. Lu, 2011), the current findings show that many predictor variables

did not significantly contribute longitudinal effects on work-family conflict, which in turn did not fulfill the precondition of mediation effects suggested by Mathieu and Taylor (2006). Lazarus (1966) stated that individuals may adopt effective coping strategies to reduce their strains when confronting adverse conditions. When employees perceive work-family conflict due to poor conditions in work and family domains, they might adopt effective strategies to deal with this problem. Accordingly, levels of perceived work-family conflict might decrease after ten months. These findings imply that future studies should explore optimal time intervals to demonstrate the longitudinal effects of work-family conflict in the Chinese context. For instance, a shorter time lag (e.g. three months) may be able to assess the effects of work-family conflict over time (Steinmetz, Frese & Schmidt, 2008).

Perceived control may be another potential explanation for insignificant results obtained in this study. Hughes and Parkes (2007) found that employees with high control at work might have reduced work-to-family interference, which in turn might not result in poor health consequences for employees confronting adverse work conditions. They explained that these employees are able to actively adjust their work strategies (e.g. rearranging their work schedule) for effectively fulfilling family requirements. Accordingly, the negative impact of adverse work conditions on employees' family living might not be transmitted through work-to-family interference. Based on the above findings, it is expected that individuals with high levels of family control may also perceive less family-to-work interference because they are also able to adjust their strategies for effectively fulfilling work requirements although they need to deal with their family problems. Therefore, the negative impact of adverse family conditions on employees' work outcomes may not be transmitted through family-to-work

interference. Future work-family studies are recommended to explore the moderating effects of work and family controls on the relationships between predictor variables, and work-family conflict and enrichment.

Furthermore, low levels of perceived identity in work and family lives may also diminish the mediating effects of work-family conflict. When employees perceive low levels of identity at work, it may imply that these employees do not have a sense of attachment to their work, and also may tend to maintain lower involvement in their work duties. Accordingly, they may not be easily threatened by potential factors which can negatively affect their work well-being and productivity (Shimazu, Bakker, Demerouti & Peeters, 2010). Although family-to-work interference may contribute negative effects on work outcomes, these employees may not experience those effects due to their lower work involvement, and also may not perceive negative consequences induced by family-to-work interference.

Supported by the above discussion, individuals with low levels of perceived identity in their family may also tend to maintain low levels of involvement in their family duties, and do not feel a sense of attachment to their family. Therefore, these people may not experience the negative effects of work-to-family interference due to their lower family involvement, and also may not experience negative consequences induced by work-to-family interference. The above illustrates that the relationships between work-family conflict and consequences may be weakened by personal factors, such as identification with work and family, and the mediating effects of work-family conflict may also be diminished.

To conclude, this study supported very few longitudinal mediating effects of work-family conflict in the relationships between work and family predictors and physical and psychological health, and work outcomes.

9.5 Mediating Effects of Work-Family Enrichment

The longitudinal mediating effects of work-family enrichment in the relationships between predictor and criterion variables were also examined in the present study. Longitudinal mediating effects of work-to-family facilitation were obtained in six out of thirty six mediation routes, and longitudinal mediating effects of family-to-work facilitation were obtained in three out of thirty six mediation paths. Hence, this study obtained very few significant longitudinal mediating effects of work-family enrichment. In particular, the current findings show that work and family supports did not affect work-family enrichment over time, which in turn did not fulfill the precondition of mediation effects suggested by Mathieu and Taylor (2006).

Some studies (e.g. Nicklin & McNall, 2013) argued that the mediating effects of work-family enrichment are determined by perceived support in work and family lives. A potential explanation of the insignificant results in the present study is that these supports from work and from family may have temporary effects for employees. For instance, temporary flexible work arrangements could provide immediate effects for employees to effectively handle their family demands. When these arrangements could not be regularly implemented in the organisation, they might decrease perceived work-family enrichment over time (McNall, Masuda & Nicklin, 2010). Therefore, the longitudinal mediating effects of work-family enrichment might be inhibited.

Furthermore, work and family supports may not necessarily relate to work-family enrichment. For instance, Wayne, Randel and Stevens (2006) found that perceived organisational support for family activities was not related to increased work-family enrichment. McNall et al. (2010) explained that the effects of work support on work-family enrichment depended on whether or not

employees could utilise this support to fulfill their family requirements. When employees perceive that work support cannot help them to solve problems at work, they may feel that they do not have sufficient support from others, which in turn may also negatively affect their perceived work-family enrichment. Based on the above findings, employees may not perceive higher work-family enrichment when they find that family support cannot aid them to effectively handle their work duties. The above discussion implies that the levels of work-family enrichment may be determined by whether or not the support in one domain (e.g. work support) can effectively solve individuals' problem in another domain (e.g. family problems) rather than the availability of support from work and family lives. In other words, it is reasonable that work-family enrichment may be reduced when social support cannot effectively solve employees problems in work and family lives, which in turn may also diminish the mediating effects of work-family enrichment.

In the present study, work support only focused on the support from work supervisors and from the organization, whereas family support only focused on the support from family relatives. However, work and family supports for employees can also come from different individuals, which may also enhance perceived work-family enrichment. For instance, coworker support may help employees to effectively solve their family problems, whereas different parties outside the family (e.g. charity groups) may also effectively assist employees to handle their family duties, which in turn allows them to have more time for handling their work duties (Baral & Bhargava, 2010). These kinds of support were not included in this study, but they may also relate to increased work-family enrichment. Future Chinese studies should continue to investigate the mediating role of work-family enrichment in relation to other predictor variables.

To conclude, this study obtained very few longitudinal mediating effects of work-family enrichment in the relationships between work and family predictors and family satisfaction, physical and psychological health, and work outcomes.

9.6 Moderating Effects of Optimism

As stated in Chapter 3, this study explored the cross-sectional and longitudinal moderating effects of optimism in relation to family-to-work interference and facilitation because optimism could buffer the negative effects of adverse conditions on personal well-being in Hong Kong (Lai, 1995). However, cross-sectional moderating effects of optimism were only obtained twice in forty eight analyses, whereas longitudinal moderating effects of optimism were obtained once in twenty four analyses. These results show that optimism might contribute very few cross-sectional and longitudinal moderating effects in the relationships between predictor variables in the family domain and family-to-work interference. Many of the hypothesized moderating effects were not significant.

The effects of optimism are determined by whether or not problem-focused coping strategies can effectively tackle personal problems in daily life (Carver & Connor-Smith, 2010). When optimists have used the above strategies, but still failed to tackle their problems, they may also perceive negative consequences, such as frustration (Daukantaitė & Zukauskiene, 2011). In other words, individuals with high optimism may not necessarily perceive more positive outcomes unless they have adopted effective ways to successfully solve their problems. Based on the above findings, it is believed that positive effects of optimism on work-family balance may be inhibited when individuals do not have effective strategies to solve problems in their work and family lives.

Optimism may also not contribute positive effects on individuals' outcomes when this disposition generates a cognitive bias which can negatively affect decision making of the people. Langabeer and DelliFranie (2011) explained that optimism might facilitate individuals to exaggerate a desirable picture of an adversity, which in turn could distort their perception of the environment. Accordingly, the individuals might make an inappropriate response to environmental contingencies because of their inaccurate judgment, and it might also negatively affect individuals' performance in the workplace (Langabeer & DelliFranie, 2011). These findings illustrate that the positive effects of optimism on work-family conflict and enrichment may be inhibited when this disposition serves as a cognitive bias for individuals.

The current findings show that optimism was not a significant moderator of the relationships between family predictors and family-to-work facilitation, which is consistent with previous findings (e.g. Cheng, Mauno & Lee, in press). Indeed, many studies (e.g. Lai, 1995) have tested whether optimism can buffer the effects of environmental stress on negative consequences for individuals, but this study further examined whether or not optimism could also intensify positive effects of family predictors on work-family enrichment, which is different from other related studies. Under the adverse conditions, optimists may have more positive consequences then pessimists because they tend to maintain the expectancy of good outcomes, and also have better adjustment in dealing with their circumstances. However, Chang and Sanna (2003) stated that both optimists and pessimists also tend to maintain the expectancy of good outcomes, which in turn may allow them to have effective strategies for handling their tasks under favourable conditions. Accordingly, these two types of people may also tend to have positive consequences. These findings imply that optimism may not

facilitate more positive effects on individuals' outcomes under favourable conditions, and future studies should continue to examine whether optimism can contribute significant moderating effects on work-family enrichments.

These insignificant results might be due to a lack of variance in optimism scores. The participants of this study tended to score at the mid-point on each item of the optimism scale. Therefore, the distribution of optimism scores was inclined to have a bundle of scores in the middle range of the scale, and there was some of variance in optimism scores. This and the low standard deviation (.78 at Time 1; .76 at Time 2) could reduce the likelihood of moderating effects for optimism.

To conclude, the present study supported very few cross-sectional and longitudinal moderating effects of optimism in the relationships between family predictors and work-family conflict and enrichment.

9.6 Moderating Effects of Confucian Work Values

The present study also explored the cross-sectional and longitudinal moderating effects of Confucian work values in relation to work-to-family interference and facilitation. Cross-sectional moderating effects of Confucian work values were found four times in one hundred and twelve analyses, whereas longitudinal moderating effects of Confucian work values were only obtained once in fifty six analyses. These results illustrate that Confucian work values might contribute very few cross-sectional and longitudinal moderating effects in the relationships between predictor variables in the work domain, and work-to-family interference and facilitation. Many of the hypothesised moderating effects of Confucian work values were not significant.

See and Kummerow (2008) found that the impact of work values on individuals was stronger when these values were consistent with the

organisational culture. They explained that organisational culture can directly affect actual operations (e.g. policies) implemented in the workplace, and the effects of work values may be altered by the above operations. When work values are inconsistent with the organisational culture, these values may not be easily demonstrated through daily operations of the organisation, which in turn might inhibit the effects of those values for employees. Confucian work values emphasise maintaining harmonious relationships with other colleagues, and high levels of social integration in the workplace. When the organisational culture is inconsistent with Confucian work values (e.g. emphasis of personal achievements at work), related organisational practices (e.g. policies of work competition between employees) may constrict the implementation of those values in the workplace. Therefore, the effects of Confucian work values may be inhibited.

In some cases, Confucian work values may not necessarily contribute positive effects for Chinese employees, including Hong Kong employees. These values accentuate that Chinese employees should not actively express personal views or feelings in order to fit with other colleagues in the organisation. When confronting the work-related conflict, some of those employees may therefore engage in passive adaptive behaviours (e.g. having a detached attitude or passive posture of withdrawal to the condition) to avoid arguments with their work colleagues (Chew & Lim, 1995; Siu, Spector & Cooper, 2006). However, previous studies (e.g. Siu et al., 2006) have shown that employees performing more passive adaptive behaviours tended to report worse health status, such as more physical symptoms because these behaviours cannot effectively solve the problem. These findings illustrate that the positive effects of Confucian work values may not be emerged when employees select inappropriate methods to handle the problems between work and family domains.

Furthermore, Confucian work values may unexpectedly provide negative effects on achieving work-family balance for employees. As mentioned earlier, these values emphasise social integration with other colleagues, and accordingly employees with Confucian work values are willing to follow the social order and the rule of interpersonal reciprocity at work (Huang, Liang & Hsin, 2012). In order to comply with expectations and requirements from other work colleagues or the organisation, these people may tend to actively use extra personal time and effort for their work assignments, particularly for collective tasks. In this condition, they may not have enough time or energy for their family duties, and Confucian work values may therefore contribute unexpected negative effects on achieving work-family balance for employees. Future studies should continue to investigate the significance of these unexpected effects.

Similar to optimism, participants in this study tended to score at the mid-point on each item of the Confucian work values scale. The distribution of Confucian work values scores was inclined to have a bundle of scores in the middle range of the scale, and a lack of variance for Confucian work values scores was also evident. This and the low standard deviation (.71 to .82 at Time 1 and Time 2) could reduce the likelihood of moderating effects for Confucian work values in this study.

The current results indicate that the 16-item instrument of Confucian work values validated by Lu et al. (2001) might not have been suitable for the participants in this study. Confirmatory factor analysis resulted in deletion of seven items of this measure. Although the content of these items was not related to the content of remaining items, the structure of the revised instrument was different from the original structure of Lu et al.'s (2001) instrument, and might not represent the full range of Confucian work values dimensions. Accordingly,

the current scale might not adequately examine the effects of Confucian work values for the participants. This psychometric problem might be another explanation for the insignificant results in the present study.

To conclude, this study supported very few cross-sectional and longitudinal moderating effects of Confucian work values in the relationships between predictor variables of the work domain and work-family conflict and enrichment. As mentioned earlier, several factors, including organisational culture and psychometric problem of the current instrument, might support the insignificant results of Confucian work values.

9.8 Theoretical Implications

Previous studies have only focused on work-family conflict, and neglected work-family enrichment when studying work-family balance in Hong Kong (Chan, 2007). However, this study separately explored potential predictors and consequences of both work-family conflict and enrichment. This approach is consistent with previous Western findings (e.g. Frone, 2003) that work-family conflict and enrichment should be included when studying work-family balance. The current findings may provide additional information to understand potential predictors and consequences of both work-family conflict and enrichment, which in turn may also contribute a further understanding of work-family balance among Hong Kong employees.

This study assessed work-family conflict and enrichment bidirectionally. This approach is rarely adopted in previous Chinese work-family studies (e.g. Chan, 2007; Choi, 2008), although it is common in Western literature. It has responded to other suggestions (e.g. Frone, 2003) that the relationships between potential antecedents, work-family conflict and enrichment and their consequences should be simultaneously studied in both work and family lives.

The use of a bidirectional approach allows researchers to separately identify potential predictors and consequences of work-to-family interference and facilitation, and potential predictors and consequences of family-to-work interference and facilitation. Supported by the above, the findings of this study may provide further information on understanding potential predictors and consequences of work-family conflict and enrichment from work to family domain, and from family to work domain respectively in Hong Kong.

The current findings indicate that potential predictors and consequences of work-family conflict and enrichment for Hong Kong employees were similar to those obtained in Western studies. In particular, these findings are consistent with the theories which underpinned the theoretical framework of this study. The present results support role depletion theory that an individual's well-being and performance in one domain could be negatively affected when perceiving higher demands or negative feelings in another domain. This might be due to limited resources that could be utilised to sufficiently fulfil the demands in both domains under the above condition. Accordingly, work-family conflict was increased, and the individual might also perceive negative outcomes (e.g. lower family satisfaction). In addition, the current findings also support role expansion theory that an individual's well-being and performance in one domain could be improved when perceiving sufficient support or resources in another domain. This might be due to support and resources being mobilised to effectively deal with duties and responsibilities in another domain. Therefore, work-family enrichment was enhanced, and the individual might also perceive positive outcomes (e.g. better psychological well-being). Supported by the above, work-family theories developed in Western countries may be applicable to

work-family balance in Hong Kong. Hence, Western literature on work-family conflict and enrichment may be generalised to Hong Kong employees.

This study found that work-family conflict and enrichment might contribute very few longitudinal mediating effects in the relationships between predictor and criterion variables. These findings are not consistent with previous work-family studies, and also imply that work-family conflict and enrichment may not necessarily contribute mediating effects in work and family domains. As described earlier, the significance of these mediating effects may be determined by different factors (e.g. perceived identity in work and family lives), which can affect the significance of the relationships between predictor variables, and work-family conflict and enrichment. These factors are recommended to be explored when discussing the above mediating effects in future studies.

This study has responded to previous studies (e.g. Powell et al., 2009) that the moderating effects of cultural values on work-family conflict and enrichment should be explored in the Chinese context, but the current findings indicate that Confucian work values might provide very few cross-sectional and longitudinal moderating effects on work-family conflict and enrichment of Hong Kong employees. These results are not consistent with other related studies (e.g. Lu et al., 2011), and imply that Confucian work values may not necessarily provide positive effects for Chinese employees, including Hong Kong employees. As described earlier, the significance of these moderating effects may be determined by different factors (e.g. organisational culture). Therefore, future studies are recommended to explore potential factors which can affect the significance of those moderating effects for Hong Kong employees.

The current findings may also help researchers to identify the sequence of work-family conflict and enrichment, which in turn can also identify appropriate

intervention points for employees in Hong Kong. For instance, this study identified that work and family factors could affect levels of work-family conflict and enrichment. Work-family conflict could provide negative consequences (e.g. poor psychological well-being), whereas work-family enrichment could contribute positive consequences (e.g. better work performance) for employees. These findings may help researchers to determine which complementary elements should be emphasised in intervention to increase work-family balance for Hong Kong employees.

9.9 Practical Implications

9.9.1 Implications at the Organisational Level

The current findings show that high levels of work demands were significantly associated with increased work-family conflict, which in turn might result in negative consequences (e.g. lower work productivity) for employees. The organization and human resource management practitioners should endeavour to improve the work conditions for employees. For instance, organisations should be alert to signals of high work demands (e.g. missing work deadlines) reported by employees, and provide appropriate interventions (e.g. re-allocation of work tasks) for those people. In addition, the organisation should also provide enough resources (e.g. work equipment) and clear policies for employees to solve work problems. This may be an effective way to reduce negative emotional responses experienced by the employees in the workplace (Wong, 2001), which in turn may benefit their family lives.

The present study found that work support from supervisors and the organisation might result in increased work-family enrichment, which in turn might result in positive consequences (e.g. better personal health) for employees. Therefore, the organisation should provide practical resources to enhance levels of

work-family enrichment experienced by the employees. In particular, a supportive work environment should be developed. Social support in the workplace is very important to reduce negative feelings and psychological strain perceived by employees (Siu & Cooper, 1998; Wong 2001). For instance, managers should pay attention to their subordinates' behaviours and emotional responses in the workplace, and provide potential assistance (e.g. special work arrangements) to help their subordinates who have work and family problems. This support may help employees to develop constructive strategies for solving problems, which in turn allows them to fulfill their work and family requirements.

Recently, some researchers (e.g. Siu & Phillips, 2007) have urged that organizations should implement family-friendly employment policies and practices in order to enhance work-family balance for employees. As mentioned earlier, these policies consist of different flexible work arrangements (e.g. flexible working hours and home office arrangements) provided by the organization, and also allow employees to have discretion in their work schedules or patterns (Hill et al., 2008; Lewis, 2003). These arrangements can be perceived as organisational support by employees, and also directly help them to deal with work and family demands. In addition, employees need to have discretion in their work schedules or patterns, which in turn may also enhance their perceived control at work. Implementing family-friendly employment policies and practices can decrease levels of work-family conflict, and also increase levels of work-family enrichment perceived by employees. In order to successfully promote these policies, organizations are required to tackle potential barriers (e.g. discrimination from colleagues) that may interfere with employees using the above policies (Mayberry, 2006).

9.9.2 Implications at the Individual Level

The current findings may help employees to implement different interventions for balancing their work and family lives. Support from family relatives is very important for employees to balance their work and family lives. This support provides not only emotional support, but also practical support to deal with different challenges, such as high work and family demands. For instance, employees may perceive lower family demands when their family can provide enough support to complete different family tasks (e.g. looking after a family member with disabilities), which in turn allows them to contribute more time and energy for their work duties. Furthermore, their relatives can provide constructive opinions to deal with work challenges (Crouter, 1984; Kirchmeyer, 1992), and to improve work performance (Grzywacz & Marks, 2000). In order to have a better arrangement of family tasks, optimal communication between employees and their family is required. This kind of communication can eliminate any potential conflict over family duties between different family members.

In this study, family support only focused on the support from employees' family relatives. As discussed earlier, this support can also come from other parties outside the family. For instance, charity groups in Hong Kong provide different types of caring services (e.g. daytime caring service for elder people) to assist employees in looking after their dependents. This example illustrates that employees should explore different sources of support for solving their family problems, which in turn will enhance their flexibility to handle their work duties.

Furthermore, the integration between work and family lives may be achieved when family resources can also be used for dealing with demands in the work domain (Voydanoff, 2007). When employees are able to use family resources (e.g. personal experience in family life) for solving their work problems, these

employees may perceive high levels of family control to arrange their family activities or duties. In order to effectively deal with work and family demands, employees should have effective strategies to utilise their family resources for handling assigned duties at work.

9.10 Strengths of the Present Study

The present study tested a model of work-family conflict and enrichment using a bidirectional approach. Previous Hong Kong work-family studies have focused on either work-family conflict or work-family enrichment. The theoretical model of this study explored the relationships between predictors, work-to-family interference and facilitation, family-to-work interference and facilitation, and potential consequences. The mediating effects of work-family conflict and enrichment were also explored in relationships between predictor and criterion variables. Therefore, the current findings may provide a comprehensive understanding of work-family conflict and enrichment for Hong Kong employees.

The present study adopted a longitudinal design to examine the theoretical model of work-family conflict and enrichment. As mentioned earlier, most organisational studies in Hong Kong have been cross-sectional, and therefore temporal effects between variables may not be inferred (Wong, 2005). Using the longitudinal design could examine whether or not temporal effects were significant in the relationships between variables. This design is rare in Chinese work-family studies, and the present study extends the knowledge of temporal effects in relation to work-family balance in the Chinese context.

The present study not only examined the relationships between work-family conflict and enrichment and personal well-being, but also explored the relationships between work-family conflict and enrichment and organisational citizenship behaviours and counterproductive workplace behaviour. These

behaviours are important for organisational survival (Kelloway et al., 2002), and the current findings indicate that work-family conflict and enrichment might affect the frequency of organisational citizenship behaviours and counterproductive workplace behaviours. This study is the first to investigate the relationships between work-family conflict and enrichment, and organisational citizenship behaviours and counterproductive workplace behaviours for Hong Kong employees. The current results may extend the understanding of work-family balance in relation to organisational health in Hong Kong.

In addition, the participants in this study came from various occupations, such as civil servants, medical professionals, accounting staff, teaching staff in different education sectors, frontline staff in catering and manufacturing industries, or employees in business firms etc. Accordingly, the current findings may be applicable to Hong Kong employees from different occupations rather than just specific occupations.

9.11 Limitations of the Present Study

The data for this study were obtained by self-reported questionnaires except for supervisor ratings of work performance and counterproductive workplace behaviours. Responses of the participants may have been influenced by common method variance, which in turn may also artificially distort the associations between the latent variables (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). For eliminating the potential influence of common method variance, different response formats were used in the measures (Podsakoff et al., 2003). Participants' supervisors were also invited to rate the levels of participants' work performance and counterproductive workplace behaviours at Time 2. Furthermore, the present study utilised structural equation modelling, which can diminish the effects of common method variance (Kenny, 2008). Although these

suggestions have been adopted, the above problem may not be completely addressed, which in turn negatively affects the accuracy of the current findings.

Although the sample of this study came from different occupations in Hong Kong, many of the participants (over 72% at Time 1 and Time 2) had achieved post-secondary education. Therefore, the current findings may be more relevant to employees with similar qualifications in Hong Kong. In other words, it may not be appropriate to generalise those findings to employees with only secondary or primary qualifications because these employees were not the majority of the current sample. This may be another limitation of this study.

The time lag between Time 1 and Time 2 should also be noted. Researchers (e.g. Collins & Graham, 2002; Maxwell & Cole, 2007) have argued that it is important to choose the appropriate time lag between measurement points, but there are no theoretical or empirical recommendations to select the time lag (Sanchez & Viswesvaran, 2002). In the present study, the time lag of ten months was selected. This time lag allowed the researcher to examine the effects of predictor variables on criterion variables over time (Lu, 2011). However, it is possible that different time lags may result in different relationships between the variables over time. In order to validate the significance of the current findings, future studies should examine the longitudinal effects of latent variables at different time intervals, such as three months or more than one year.

The present study collected the data at two time periods, which is appropriate to examine the longitudinal mediating and moderating effects. This two-wave panel design is better than the cross-sectional design when conducting organisational studies (Cole & Maxwell, 2003; Zapf, Dormann & Frese, 1996). However, some researchers (e.g. Huang, Hammer, Neal & Perrin, 2004; Taris & Kompier, 2006) argued that the three-wave panel design could result in a better

estimation of the longitudinal effects, but it was not feasible to be implemented due to time constraints of the present study. It should be noted that different types of panel design may result in different research findings. For instance, using the three-wave panel design can assess the significance of longitudinal effects in two different time intervals, which in turn may provide a better estimation of temporal effects among variables (Lu, 2011).

As discussed earlier, items of some measures in this study were deleted according to results of confirmatory factor analyses. In particular, seven items of the 16-item Confucian work values measure were removed for further analyses. These revised measures might reflect the participants' perception, but the structure of these measures was different from their original structure. In other words, the revised measures might not entirely capture the original content conceived in those measures, which in turn might also negatively affect the current findings. This is also a possible limitation of this study.

9.12 Recommendations for Future Studies

Several recommendations are suggested for future studies. In this study, self-report questionnaires were mainly used to collect data, but they might have potential limitations. Future studies are recommended to use other sources of data (e.g. performance appraisal records) for assessing the relationships between observed variables. For instance, Van Steenbergen (2007) used the annual work performance record (e.g. the annual average rate of work errors) to examine the relationships between work-family conflict and enrichment and work productivity of employees. This is an alternative method to study the effects of work-family conflict and enrichment on performance.

The present study showed significant relationships between predictor variables, work-family conflict and enrichment and criterion variables.

Nevertheless, future studies could adopt qualitative measures, such as interviews, for developing a comprehensive picture of work-family conflict and enrichment. In particular, the data collected by qualitative measures may be able to explain any potential changes in the observed variables (Patton, 2002), and may provide an in-depth understanding of the processes of work-family conflict and enrichment.

This study only examined family satisfaction as a potential consequence of work-family conflict and enrichment in the family domain. However, work-family conflict and enrichment may also have potential effects on other family issues for employees. For instance, work-family conflict was found to increase the burden on employees who were responsible for organising family leisure activities (Lau, Ma, Wan, Wong & Lai, 2012), whereas work-family enrichment could contribute to better home performance of those people (Van Steenbergen, 2007). Future studies can explore different family indicators to examine the effects of work-family conflict and enrichment in the family domain.

The mediating effects of work-family conflict and enrichment between predictor and criterion variables were assessed, but the moderating effects of work-family conflict and enrichment were not explored in this study. Previous studies (e.g. Su, 2011) found that work-family conflict was a moderator which intensified the effects of anger response on depression for primary teachers. Work-family enrichment was also a moderator that buffered the effects of role conflict on intention to turnover for Taiwanese soldiers (Ho, 2011). In order to extend the theoretical literature on work-family conflict and enrichment, future studies should systematically assess those moderating effects in relation to other organisational issues (e.g. workplace stress).

This study explored the moderating effects between predictor variables and work-family conflict and enrichment, but the moderating effects between

work-family conflict and enrichment and criterion variables were not included. O'Driscoll et al. (2006) argued that moderating effects could be found in the relationships between work-family conflict and its consequences. For instance, social support may inhibit the effects of work-family conflict on family satisfaction (Neerpal & Barath, 2013), and strengthen the negative relationship between work-family enrichment and exhaustion (Karatepe, 2010). Future studies could explore potential moderating effects in the relationships between work-family conflict and enrichment and their consequences. They will help work-family researchers to understand how the effects of work-family conflict and enrichment are altered by other factors.

Recently, some organisational studies (e.g. Lu et al., 2011; Siu et al., 2005) explored potential differences between Chinese employees living in different places (e.g. Beijing and Taipei). They suggested that Chinese employees from different cities might have different perceptions and responses on organizational issues because of demographic differences, such as educational background and living style. These employees may also have their own style to handle work and family issues. For extending the understanding of work-family conflict and enrichment in the Chinese context, future studies could evaluate the current findings using data from other Chinese employees.

9.13 Conclusion

The present study explored work-family conflict and enrichment experienced by Hong Kong employees, and extended the understanding of work-family conflict and enrichment in the Chinese context. Data collection was conducted at two time points, with a time interval of ten months. This time lag was supported by previous findings, but it might not be able to consistently show the

longitudinal effects in this study. Different time lags, such as three months or more than one year, are suggested to be used in future longitudinal studies.

This study identified the sources of work-family conflict and enrichment. Work-family conflict might contribute to poor physical and psychological well-being, and lower family satisfaction and work productivity. Work-family enrichment might contribute to better physical and psychological well-being, and higher family satisfaction and work productivity.

The current study also found that work-family conflict and enrichment might contribute very few indirect effects on employees' physical and psychological well-being, family satisfaction and work productivity together with other work and family factors over time. Furthermore, the present study obtained very few cross-sectional and longitudinal moderating effects of optimism and Confucian work values in the relationships between work predictors, family predictors and work-family conflict and enrichment.

To conclude, this study extended the understanding of the impact of work-family conflict and enrichment on employees' well-being, family satisfaction and work productivity in Hong Kong. The findings can also assist practitioners, managers and employees to devise appropriate interventions for tackling work-family conflict and enhancing work-family enrichment. These interventions will be useful to improve employees' well-being, family satisfaction and productivity in the workplace. In order to have a better understanding of work-family conflict and enrichment in Chinese context, further studies are needed to study those topics among other Chinese employees.

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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR THE PARTICIPANTS

Dear Participants,

My name is Kenchi Chi-kin WONG. I am a registered psychologist (Industrial/Organizational Psychology) in Hong Kong, and a doctoral candidate in School of Psychology at the University of Waikato, New Zealand. Currently, I am conducting a longitudinal study focusing on work-family balance among employees in Hong Kong. This study aims to explore different issues of the balance confronted by employees nowadays, and it is also being undertaken as part of my PhD degree in organizational psychology.

Your participation will make an important contribution to the current study. **Attached is a questionnaire that should take approximately 20-30 minutes to complete. You will be invited to complete this questionnaire TWICE within 10 months. Please write down your email address at the bottom of this page so that I can send the questionnaire to you again in 10 months time, and keep track of your returned questionnaires**. There are no right or wrong answers. Each item asks for your personal view. Participation in the study is completely voluntary, and you have the right to withdraw at anytime. Upon receiving your completed questionnaire, I will assume that you have given consent to participate in the study.

All of the information you provide will be used for research purposes only, and you will receive a brief overall report at the end of this study. In addition, the information will be kept completely confidential, and disposed of immediately after finishing all research activities of the current study. No individual's responses will be disclosed to anyone.

My supervisor is Professor Michael O'Driscoll, at the School of Psychology at the University of Waikato, New Zealand. This research has received ethical approval from the School of Psychology Research and Ethics Committee at the University of Waikato. Should you have any questions relating to the current study, please feel free to email me at ckw13@students.waikato.ac.nz or Professor O'Driscoll at m.odriscoll@waikato.ac.nz .

Thank you in advance for your participation, and I extremely appreciate your time and effort.

Sincerely,

Kenchi Chi-kin WONG, M.Sc.
Doctoral Candidate
School of Psychology
The University of Waikato
New Zealand

Your Email Address: _____
Date: _____

A. Perceptions of your job

Circle one of the five categories for each statement as it applies to you.

1. Less than once per month or never **2. Once or twice per month**
3. Once or twice per week **4. Once or twice per day**
5. Several times per day

1. How often does your job require you to work very fast?	1	2	3	4	5
2. How often does your job require you to work very hard?	1	2	3	4	5
3. How often does your job leave you with little time to get things done?	1	2	3	4	5
4. How often is there a great deal to be done?	1	2	3	4	5
5. How often do you have to do more work than you can do well?	1	2	3	4	5
How often do you find it difficult or impossible to do your job because of…?					
6. Poor equipment or supplies.	1	2	3	4	5
7. Organizational rules and procedures	1	2	3	4	5
8. Other employees.	1	2	3	4	5
9. Your supervisor.	1	2	3	4	5
10. Lack of equipment or supplies.	1	2	3	4	5
11. Inadequate training.	1	2	3	4	5
12. Interruptions by other people.	1	2	3	4	5
13. Lack of necessary information about hat to do or how to do it.	1	2	3	4	5
14. Conflicting job demands	1	2	3	4	5
15. Inadequate help from others.	1	2	3	4	5
16. Incorrect instructions.	1	2	3	4	5

Please answer by circling the relevant number

1. Very inaccurate **2. Mostly inaccurate** **3. Slightly inaccurate**
4. Neither accurate nor inaccurate **5. Slightly accurate** **6. Mostly accurate**
7. Very accurate

17. I decide on my own how to go about doing the work.	1	2	3	4	5	6	7
18. The job gives me a chance to use my personal initiative or judgment in carrying out the work.	1	2	3	4	5	6	7
19. The job gives me considerable opportunity for independence and freedom in how I do the work.	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

20. At work, I have to do things that should be done differently.	1	2	3	4	5	6	7
21. At work, I receive assignments without the manpower to complete them.	1	2	3	4	5	6	7
22. I have to buck a rule or policy in order to carry out an assignment at work.	1	2	3	4	5	6	7
23. I work with two or more groups who operate quite differently.	1	2	3	4	5	6	7
24. I receive incompatible requests from two or more people at work.	1	2	3	4	5	6	7
25. At work, I do things that may be accepted by some people and not accepted by others.	1	2	3	4	5	6	7
26. At work, I receive an assignment without adequate resources and material to execute it.	1	2	3	4	5	6	7
27. I work on unnecessary things at work.	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

28. My supervisor understands my family demands.	1	2	3	4	5	6	7
29. My supervisor listens when I talk about my family.	1	2	3	4	5	6	7
30. My supervisor acknowledges that I have obligations as a family member.	1	2	3	4	5	6	7
To what extent do you agree that each of the following statements represent the philosophy or beliefs of your organization? *(For these items, do not respond in terms of what you personally believe, but rather in terms of the beliefs and assumptions which you feel your organization holds)*							
31. Work should be the primary priority in a person's life.	1	2	3	4	5	6	7
32. Long hours inside the office are the way to achieving advancement	1	2	3	4	5	6	7
33. It is best to keep family matters separate from work	1	2	3	4	5	6	7
34. It is considered taboo to talk about life outside of work	1	2	3	4	5	6	7
35. Expressing involvement and interest in nonwork matters is viewed is healthy	1	2	3	4	5	6	7

36. Employees who are highly committed to their personal lives cannot be highly committed to their work	1	2	3	4	5	6	7
37. Attending to personal needs, such as taking time off for sick children is frowned upon	1	2	3	4	5	6	7
38. Employees should keep their personal problems at home.	1	2	3	4	5	6	7
39. The way to advance in this company is to keep nonwork matters out of the workplace	1	2	3	4	5	6	7
40. Individuals who take time off to attend to personal matters are not committed to their work	1	2	3	4	5	6	7
41. It is assumed that the most productive employees are those who put their work before their family life	1	2	3	4	5	6	7
42. Employees are given ample opportunity to perform both their job and their personal responsibilities well	1	2	3	4	5	6	7
43. Offering employees flexibility in completing their work is viewed as a strategic way of doing business	1	2	3	4	5	6	7
44. The ideal employee is the one who is available 24 hours a day.	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

45. In general, I don't like my job.	1	2	3	4	5	6	7
46. All in all, I am satisfied with my job.	1	2	3	4	5	6	7
47. In general, I like working here.	1	2	3	4	5	6	7

B. Your perception of your family

Please answer by circling the relevant number

1. Never **2. Rarely** **3. Occasionally** **4. Sometimes**
5. Often **6. Usually** **7. Always**

How often do you feel…….							
48. that your family makes too many demands on you.	1	2	3	4	5	6	7
49. that you have too much family-related work to do.	1	2	3	4	5	6	7
50. in general overwhelmed by the demands of your family.	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

51. At home, I have to do things that should be done differently.	1	2	3	4	5	6	7
52. At home, I have things to do without the time to complete them.	1	2	3	4	5	6	7
53. Outside of work, I deal with two or more groups who operate quite differently.	1	2	3	4	5	6	7
54. I receive incompatible requests from two or more people at home.	1	2	3	4	5	6	7
55. At home, I do things that may be preferred by some people and not preferred by others.	1	2	3	4	5	6	7
56. At home, I receive an assignment without adequate resources and material to execute it.	1	2	3	4	5	6	7
57. I work on unnecessary things at home.	1	2	3	4	5	6	7

Please check who helps with housework (e.g. cooking) in your home, and answer by circling the relevant number

1. Never **2. Few times per year** **3. At least once per month**
4. At least twice per month **5. Daily**

58. Spouse/partner	1	2	3	4	5
59. Parents (mine or spouse/partner)	1	2	3	4	5
60. Siblings (mine or spouse/partner)	1	2	3	4	5
61. Grandparents/ aunts/uncles/cousins	1	2	3	4	5
62. Friends or neighbours	1	2	3	4	5
63. Someone I hire and pay	1	2	3	4	5

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

64. There is really no way I can solve some of the problems I have in my family life.	1	2	3	4	5	6	7
65. Sometimes, I feel that I'm being pushed around in my family life.	1	2	3	4	5	6	7
66. I have little control over the things that happen to me in my family life.	1	2	3	4	5	6	7

67. I can do just about anything I really set my mind to in my family life.	1	2	3	4	5	6	7
68. I often feel helpless in dealing with the problems in my family life.	1	2	3	4	5	6	7
69. What happens to me in my family life in the future mostly depends on me.	1	2	3	4	5	6	7
70. There is little I can do to change many of the important things in my family life.	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

71. My family is very enjoyable	1	2	3	4	5	6	7
72. All in all, I am satisfied with my family.	1	2	3	4	5	6	7
73. All in all, the family life I have is great.	1	2	3	4	5	6	7

C. Interaction between your work and family life

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

74. The demands of my work interfere with my home and family life.	1	2	3	4	5	6	7
75. The amount of time my job takes up makes it difficult to fulfill family responsibilities.	1	2	3	4	5	6	7
76. Things I want to do at home do not get done because of demands my job puts on me.	1	2	3	4	5	6	7
77. My job produces strain that makes it difficult to fulfill family duties.	1	2	3	4	5	6	7
78. Due to work-related duties, I have to make changes to my plans for family activities.	1	2	3	4	5	6	7
79. The demands of my family or spouse/partner interfere with work-related activities.	1	2	3	4	5	6	7
80. I have to put off doing things at work because of demands on my time at home.	1	2	3	4	5	6	7
81. Things I want to do at work don't get done because of the demands of my family or spouse/partner.	1	2	3	4	5	6	7

82. My home life interferes with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtimes.	1	2	3	4	5	6	7
83. Family-related strain interferes with my ability to perform job-related duties.	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

My involvement in *my work*……							
84. helps me to understand different viewpoints and this helps me be a better family member.	1	2	3	4	5	6	7
85. helps me to gain knowledge and this helps me be a better family member.	1	2	3	4	5	6	7
86. helps me acquire skills and this helps me be a better family member.	1	2	3	4	5	6	7
87. puts me in a good mood and this helps me be a better family member.	1	2	3	4	5	6	7
88. makes me feel happy and this helps me be a better family member.	1	2	3	4	5	6	7
89. makes me cheerful and this helps me be a better family member.	1	2	3	4	5	6	7
90. helps me feel personality fulfilled and this helps me be a better family member.	1	2	3	4	5	6	7
91. provides me with a sense of accomplishment and this helps me be a better family member.	1	2	3	4	5	6	7
92. provides me with a sense of success and this helps me be a better family member.	1	2	3	4	5	6	7

My involvement in *my family*……							
93. helps me to gain knowledge and this helps me be a better worker.	1	2	3	4	5	6	7
94. helps me acquire skills and this helps me be a better worker.	1	2	3	4	5	6	7
95. helps me expand my knowledge and this helps me be a better worker.	1	2	3	4	5	6	7
96. puts me in a good mood and this helps me be a better worker.	1	2	3	4	5	6	7
97. makes me feel happy and this helps me be a better worker.	1	2	3	4	5	6	7

98. makes me cheerful and this helps me be a better worker.	1	2	3	4	5	6	7
99. requires me to avoid wasting time at work and this helps me be a better worker.	1	2	3	4	5	6	7
100. encourages me to use my work time and this helps me be a better worker.	1	2	3	4	5	6	7
101. causes me to be more focused at work and this helps me be a better worker.	1	2	3	4	5	6	7

D. Your Work Behaviours

Please answer by circling the relevant number

102. Over the *last 3 months*, roughly how productive have you felt in your job? (Please circle one)

1. Less than 50% productive
2. 50% - 59% productive
3. 60% - 69% productive
4. 70% - 79% productive
5. 80% - 89% productive
6. 90% - 99% productive
7. 100% productive

Please indicate how often you have carried out each of the following, by circling the relevant number

1. Never **2. Rarely** **3. Occasionally** **4. Sometimes**
5. Often **6. Usually** **7. Always**

How often have you? ……

103. Helped other employees with their work when they have been absent.	1	2	3	4	5	6	7
104. Volunteered to do things not formally required by the job.	1	2	3	4	5	6	7
105. Taken the initiative to orient new employees to the department even though it is not part of my job description.	1	2	3	4	5	6	7
106. Helped others when their work load increases (assisting others until they get over the hurdles).	1	2	3	4	5	6	7
107. Assisted supervisor with his/her duties.	1	2	3	4	5	6	7
108. Made innovative suggestions to improve the overall quality of the department.	1	2	3	4	5	6	7
109. Punctuality in arriving at work on time in the morning, and after lunch and breaks.	1	2	3	4	5	6	7

110. Exhibited attendance at work beyond the norm, for example you took less days off than most individuals or less than allowed.	1	2	3	4	5	6	7
111. Given advance notice if unable to come to work	1	2	3	4	5	6	7
112. Exaggerated your hours worked.	1	2	3	4	5	6	7
113. Started negative rumors about your company.	1	2	3	4	5	6	7
114. Gossiped about your coworkers.	1	2	3	4	5	6	7
115. Covered up your mistakes.	1	2	3	4	5	6	7
116. Competed with your coworkers in an unproductive way.	1	2	3	4	5	6	7
117. Gossiped about your supervisors.	1	2	3	4	5	6	7
118. Stayed out of sight to avoid work.	1	2	3	4	5	6	7
119. Taken company equipment or merchandise	1	2	3	4	5	6	7
120. Blamed your coworkers for your mistakes.	1	2	3	4	5	6	7
121. Intentionally worked slowly.	1	2	3	4	5	6	7

E. Your Work Values

Please read the following items carefully and answer by circling the relevant number.

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

122. There are real differences between ideal and practice.	1	2	3	4	5	6	7
123. In doing things one should emphasize practicality rather than theories.	1	2	3	4	5	6	7
124. Persevering in one's goal is the key for success.	1	2	3	4	5	6	7
125. Careful deliberation and thorough contemplation always better my chance for success.	1	2	3	4	5	6	7
126. Nothing is difficult for a diligent person	1	2	3	4	5	6	7
127. Diligence is the basic requirement for business success.	1	2	3	4	5	6	7
128. I regard those people in the same group with me as "my people" who are different from other people.	1	2	3	4	5	6	7
129. Whenever my benefits conflict with my group's, I should sacrifice my personal interest for the sake of the group	1	2	3	4	5	6	7
130. I think being patient is a virtue.	1	2	3	4	5	6	7
131. I can bear short-term frustrations until certain levels of accomplishments have been achieved.	1	2	3	4	5	6	7
132. The persons in high positions should maintain the dignity of their position.	1	2	3	4	5	6	7
133. Subordinates should consistently show loyalty and obedience.	1	2	3	4	5	6	7

134. It's worthwhile to pursue higher education even if it costs time and money.	1	2	3	4	5	6	7
135. High degree of education can enhance a person's social status and influences.	1	2	3	4	5	6	7
136. I will maintain a good relationship with my superiors, and hope that they can give significant help for my further development at work.	1	2	3	4	5	6	7
137. I believe that emphasizing interpersonal relationship and individual's social status will be better to solve problems instead of using rules and regulations.	1	2	3	4	5	6	7

F. Your general feelings

Please answer by circling the relevant number

Over the last 3 months, have you experienced any of the following symptoms or change in behaviour?

1. Never **2. Rarely** **3. Occasionally** **4. Sometimes**
5. Often **6. Usually** **7. Always**

138. Feeling unaccountably tired or exhausted.	1	2	3	4	5	6	7
139. Tendency to eat, drink or smoke more than usual.	1	2	3	4	5	6	7
140. Headache.	1	2	3	4	5	6	7
141. Dizziness.	1	2	3	4	5	6	7
142. Lost appetite.	1	2	3	4	5	6	7
143. Shortness of breath.	1	2	3	4	5	6	7

Over the last 3 months, have you experienced any of the following symptoms or change in behaviour?

1. Never **2. Rarely** **3. Occasionally** **4. Sometimes**
5. Often **6. Usually** **7. Always**

144. Been able to concentrate on whatever you are doing?	1	2	3	4	5	6	7
145. Lost much sleep over worry?	1	2	3	4	5	6	7
146. Felt that you were playing a useful part in things?	1	2	3	4	5	6	7
147. Felt capable of making decisions about things?	1	2	3	4	5	6	7
148. Felt constantly under strain?	1	2	3	4	5	6	7
149. Felt that you couldn't overcome your difficulties?	1	2	3	4	5	6	7
150. Been able to enjoy your normal day-to-day activities?	1	2	3	4	5	6	7
151. Been able to face up to your problems?	1	2	3	4	5	6	7
152. Been feeling unhappy and depressed?	1	2	3	4	5	6	7

153. Been losing self-confidence in yourself?	1	2	3	4	5	6	7
154. Been thinking of yourself as a worthless person?	1	2	3	4	5	6	7
155. Been feeling reasonably happy, all things considered?	1	2	3	4	5	6	7

Please answer by circling the relevant number

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

156. In uncertain times, I always expect the best.	1	2	3	4	5	6	7
157. Looking into the future, I do not see any positive scenario.	1	2	3	4	5	6	7
158. I am always optimistic about my future.	1	2	3	4	5	6	7
159. I hardly ever expect things to go my way.	1	2	3	4	5	6	7
160. I rarely count on good things happening to me.	1	2	3	4	5	6	7
161. Overall, I expect more good things happen to me than bad.	1	2	3	4	5	6	7

G. Supplementary Information

162. How many hours do you work in a typical ***week***? _____ hours
163. Excluding official holidays and annual leave, please indicate the number of days you have taken off work over the past ***12 months***: _____ days
164. How many hours do you spend on family tasks or works in a typical ***week***? _____ hours
165. Please indicate how many dependents live with you: _____ person/people
166. Your gender: 1. □ Male 2. □ Female
167. Age: _____ years
168. Marital Status: 1. □ Married/Cohabiting 2. □ Unmarried or separated
169. Education: 1. □ Primary education 2. □ Secondary education
3. □ Some university 4. □ University degree
5. □ Postgraduate degree 6. □ PhD/Doctorate degree
170. How long do you have been in your current company? _____ years
171. How long do you have been in your current job? _____ years
172. What is your position in your company?
1. □ Top level manager 2. □ Middle level manager
3. □ First level supervisor 4. □ Nonsupervisory 5. Other: _____
173. Your occupation: _____

~ End ~

APPENDIX B: QUESTIONNAIRE FOR THE PARTICIPANTS' SUVERVISORS

Dear Participants,

My name is Kenchi Chi-kin WONG. I am a registered psychologist (Industrial/Organizational Psychology) in Hong Kong, and a doctoral candidate in the School of Psychology at the University of Waikato, New Zealand. Currently, I am conducting a longitudinal study focusing on work-family balance among employees in Hong Kong. This study aims to explore different issues of the balance confronted by these employees, and it is also being undertaken as part of my PhD degree in organizational psychology.

In previous months, your subordinate has participated in the present study. In order to comprehensively understand work behaviours among your subordinates, you are invited to complete this brief questionnaire. Your participation will make an important contribution to the present study. **Once your subordinate has written and signed his/her name at the bottom of this page, it means that your subordinate has given approval for you to provide these ratings. This questionnaire requires only a few minutes to be completed, and please return this questionnaire directly to me through email (my address:** ckw13@students.waikato.ac.nz**). There are no right or wrong answers, and each item asks for your personal view.** Participation in the study is completely voluntary, and you have the right to withdraw at anytime. Upon receiving your completed questionnaire, I will assume that you have given consent to participate in the study.

All of the information you provide will be used for research purposes only. In addition, the information will be kept completely confidential, and disposed of immediately after finishing all research activities of the current study. No individual's responses will be disclosed to anyone.

My supervisor is Professor Michael O'Driscoll, at the School of Psychology at the University of Waikato, New Zealand. This research has received ethical approval from the School of Psychology Research and Ethics Committee at the University of Waikato. Should you have any questions relating to the present study, please feel free to email me at ckw13@students.waikato.ac.nz or Professor O'Driscoll at m.odriscoll@waikato.ac.nz .

Again, thank you for your participation, and I extremely appreciate your time and effort.

Sincerely,

Kenchi Chi-kin WONG, M.Sc.
Doctoral Candidate
School of Psychology
The University of Waikato
New Zealand

Name and signature of your subordinate: _____
Email address of your subordinate: _____
Date: _____

A. Work Behaviours of Your Subordinate

Please answer by circling the relevant number based on your personal view of the work performance of this subordinate.

1. Strongly disagree **2. Disagree** **3. Slightly disagree**
4. Neither agree nor disagree **5. Slightly agree** **6. Agree**
7. Strongly agree

1. This subordinate makes an important contribution to the overall performance of our work unit.	1	2	3	4	5	6	7
2. This subordinate is one of the excellent employees in our work unit.	1	2	3	4	5	6	7
3. This subordinate can always fulfill the jobs assigned by the supervisor in time.	1	2	3	4	5	6	7
4. The performance of this subordinate can always meet the requirements of the supervisor.	1	2	3	4	5	6	7

Please indicate how often your subordinate has carried out each of the following, by circling the relevant number.

1. Never **2. Rarely** **3. Occasionally** **4. Sometimes**
5. Often **6. Usually** **7. Always**

How often has your subordinate? ……

5. Exaggerated his/her hours worked.	1	2	3	4	5	6	7
6. Started negative rumors about his/her company.	1	2	3	4	5	6	7
7. Gossiped about his/her coworkers.	1	2	3	4	5	6	7
8. Covered up his/her mistakes.	1	2	3	4	5	6	7
9. Competed with his/her coworkers in an unproductive way.	1	2	3	4	5	6	7
10. Gossiped about his/her supervisors.	1	2	3	4	5	6	7
11. Stayed out of sight to avoid work.	1	2	3	4	5	6	7
12. Taken company equipment or merchandise	1	2	3	4	5	6	7
13. Blamed his/her coworkers for his/her mistakes.	1	2	3	4	5	6	7
14. Intentionally worked slowly.	1	2	3	4	5	6	7

~ End ~